

DIFFERENCES IN THE ACTIVITIES  
OF TEACHERS IN  
RURAL ONE-TEACHER SCHOOLS  
AND OF  
GRADE TEACHERS IN CITIES

By  
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## APPRECIATION

A study such as this is possible only when many persons cooperate. Not less than fifteen hundred teachers have given aid. To each of them the writer expresses his sincere thanks. Each member of my committee, Professors H. D. Kitson, W. C. Bagley, Fannie W. Dunn, and Mabel Carney, gave freely of their time and experience. Any merit the study may possess is due, in large measure, to them. Professor H. A. Ruger gave valuable assistance in criticizing the statistical sections of the work. And most of all the writer wishes to express his appreciation to his wife, Rose Stoelzing McGuffey, without whose aid and inspiration this task would never have been attempted.



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## CHAPTER I

### THE PROBLEM

Are there any real differences which distinguish the duties and responsibilities of the teacher of the rural one-teacher school from those of the grade teacher in towns and cities? What is the exact nature of those differences, if any exist? Are they accidental and traditional, or are they intrinsic and necessary? Can they be overcome by change in administration and supervision of the one-teacher school? Are they of any significance in the training of teachers for one-teacher schools? If differentiation of training is necessary for teachers who are to go to one-teacher schools, just what type and how much training is desirable?

The following study is an attempt to answer with some finality certain of the above questions and throw some light on the others. There has been a pronounced tendency in certain quarters to minimize the importance of the problem of rural teacher training. A few educators have held that there is no real difference between the two kinds of jobs, and that a girl properly trained as a grade teacher in a city will do just about as well in the one-teacher school. Others have held that, even though there may be certain important differences, the one-teacher school is disappearing so rapidly that the problem of rural teacher training is of small importance. More than 160,000<sup>1</sup> one-teacher schools are still in existence. Their number is decreasing much more slowly than was the case a few years ago, and competent judges feel that because of climatic and geographic conditions a large number of them will always be with us. The purpose of this study is to present the facts and nature of the differences between rural and urban teaching.

<sup>1</sup> U. S. Bureau of Education, *Rural School Circular No. 17*, Oct. 1928.

## CHAPTER II

### COLLECTION OF DATA

#### TEACHERS' DIARIES

During the year 1926-27, teachers in the one-teacher schools of Weld and Larimer counties in Colorado were asked to keep a day-by-day record of their activities, duties, and responsibilities. At the end of March, 59 teachers turned in their diaries covering periods of from two to ten weeks. The items mentioned in all these diaries were tabulated under suitable heads and their frequencies noted. The 300 items found in this list served as the basis for building the check list which forms the center of this study.

#### THE CHARTERS CHECK LIST

In September 1927 the writer visited the research office of Dr. W. W. Charters in Chicago and was shown the entire workings of the Commonwealth study. Through the kindness of Dr. Douglas Waples, he obtained copies of the check lists being used, and later through correspondence the results of the preliminary findings. This material was used freely in deciding what should be the contents of the check list and the form it should take.

#### OPINION OF GRADUATE STUDENTS

Through the kindness of Professor Mabel Carney of Teachers College, Columbia University, and of Dr. M. L. Pittman at Ypsilanti, 60 graduate students in rural education furnished replies to the question: "List all those activities and duties which must be performed by the teacher in the one-teacher school that the grade teacher in a city does not need to do, or at least does in a manner so different that different training is desirable." Almost all of these graduate students had taught in both rural and city schools and about half of them had studied the list of items from teachers' diaries and the Charters material mentioned above.

## OPINION OF COUNTY SUPERINTENDENTS

Sixteen county superintendents in thirteen states furnished a list of their 10 best and 10 poorest rural teachers, with reasons for superiority and inferiority. These reasons were tabulated and examined for items which might be unique to the teacher of the one-teacher school.

## OPINION OF EXPERTS

The material secured from the four sources listed above was submitted to experts in rural education and in teacher training, and on the basis of consensus of opinion a list of 112 items was selected for a check list.

TABLE I

REPLIES FROM TEACHERS IN ONE-TEACHER SCHOOLS SHOWN BY STATES

STATE	BEST TEACHERS	POOREST TEACHERS	GROUP (I)	GROUP (II)	TOTAL FROM STATE
1. Alabama . . . . .	4	3	.	..	7
2. Arkansas . . . . .	10	13	..	17	40
3. California . . . . .	.	..	.	19	19
4. Colorado . . . . .	8	4	55	..	67
5. Iowa . . . . .	..	..	6	..	6
6. Kansas . . . . .	4	5	3	..	12
7. Maine . . . . .	5	5	.	23	33
8. Minnesota . . . . .	12	4	..	..	16
9. Missouri . . . . .	6	9	..	..	15
10. Montana . . . . .	..	.	.	47	47
11. Nebraska . . . . .	7	9	2	..	18
12. New Jersey . . . . .	14	10	..	..	24
13. New Mexico . . . . .	..	..	..	15	15
14. New York . . . . .	..	.	..	40	40
15. North Carolina . . . . .	8	6	..	.	14
16. North Dakota . . . . .	5	4	.	..	9
17. Ohio . . . . .	..	..	8	..	8
18. Oklahoma . . . . .	..	..	15	..	15
19. Oregon . . . . .	.	.	..	48	48
20. Pennsylvania . . . . .	5	6	..	..	11
21. South Dakota . . . . .	..	..	5	..	5
22. Texas . . . . .	..	..	12	.	12
23. Wisconsin . . . . .	.	.	.	49	49
24. Wyoming . . . . .	6	6	8	..	20
Total . . . . .	94	84	114	258	550
Number of States	13	13	9	8	24

## THE CHECK LIST

The check list (see Table V) was submitted in March 1927 to the 156 best and 148 poorest teachers whose names and addresses were secured from the county superintendents mentioned above, and the returns are shown in Table VII. During April 1927 the list was submitted to about 100 teachers in one-teacher schools with whom the writer was acquainted, or whose names he had secured from friends. During the month of July 1927 the list was submitted to rural teachers attending summer schools in several states. During November 1927, 600 more check lists were mailed to teachers of one-room schools whose names were secured from their county superintendents. The states from which these returns were received are shown in Table I

The same check list was submitted in December 1927 to grade teachers in towns and cities. The location of these cities by states is shown in Table II. The cities were selected as being fairly representative and because the writer had friends who could aid him in getting the proper returns.

TABLE II  
REPLIES FROM GRADE TEACHERS IN TOWNS AND CITIES SHOWN BY STATES

STATE	NUMBER OF REPLIES
1. Arizona .....	29
2. Colorado .....	51
3. Kansas ..	25
4. Maine .....	11
5. Missouri .....	26
6. New York .....	15
7. Oregon .....	14
8. Virginia .....	29
Total .....	200

## OBSERVATION AND INTERVIEW

After the first returns from the check list had been received and tabulated, the writer visited several one-teacher schools and watched the teachers at work for several hours each, and at the end of the period interviewed each in an attempt to discover if there were additional items which should be on the check list, but nothing of value was discovered.

## CHAPTER III

### THE FINDINGS

#### REASONS FOR SUCCESS AND FAILURE OF TEACHERS IN ONE-TEACHER SCHOOLS

The writer secured from various sources the names of two of the best county superintendents in each of 20 states. He wrote to each, explaining the purpose of the study and making this request: "Please list for me the names and addresses of your 10 best and 10 poorest teachers in one-room schools, with the reasons for superiority or inferiority of each." Adequate and comparable returns were received from 16 superintendents in thirteen states.<sup>1</sup> All returns used were from counties in which there were 50 or more one-teacher schools.

One hundred fifty-six teachers were listed as best, and Table III gives the reasons for their superiority. Among the 30 reasons for superiority listed by two or more superintendents, certain items may be and probably are due to difference in the job. Others in the list would apply to other teachers as well as to those rated.

An examination of Table IV shows that 148 teachers were rated as poorest, and that 28 reasons were listed by two or more superintendents for the inferiority.

The items noted in the preceding paragraphs were considered in the making of the check list shown in Table V. The names of the teachers rated were used as a mailing list and the results of their responses to the check list are shown in Table VII.

#### THE CHECK LIST

In the construction of the list the diaries of teachers, described in the preceding chapter, formed the starting point. All the activities, duties, and responsibilities mentioned in the diaries were tabulated and submitted to 20 persons who had taught in both the

<sup>1</sup> Alabama, Arkansas, Colorado, Kansas, Maine, Minnesota, Missouri, Nebraska, North Carolina, North Dakota, New Jersey, Pennsylvania, and Wyoming.

TABLE III  
REASONS FOR SUPERIORITY OF 10 BEST TEACHERS IN ONE-TEACHER SCHOOLS  
AS LISTED BY 16 COUNTY SUPERINTENDENTS

No	RANK AS TO NUMBER		ITEM	No OF TEACHERS	No. OF SUPERIN- TENDENTS
	Teachers	Superin- tendents			
1....	1	1.5	Has had special training for rural teaching	98	15
2....	2	3.5	Interest in and love for children	65	14
3....	3	1.5	Hard-working—Industrious.	54	15
4 ...	4	3.5	Cooperates well with patrons	53	14
5....	5	6	Excellent methods of teaching	47	12
6 ...	7	5	Good personality	45	13
7....	7	9	Is a community leader	45	10
8....	7	15.5	Is well trained	45	7
9....	9	7	Is earnest and enthusiastic	42	11
10 ..	10	10	Cooperates well with school officials	40	9
11 ...	11	12	Desirable personality traits, honesty, loyalty, etc.	36	8
12. .	12	12	Plans daily work	34	8
13...	13	8.5	Is especially interested in rural work	30	10
14 ...	14	19.5	Fidelity to interests of the child	21	6
15....	15.5	15.5	Has had long experience	19	7
16....	15.5	22	Has a good professional attitude	19	5
17 ...	17.5	15.5	Is tactful	16	7
18 ...	17.5	25.5	Utilizes rural environment in her teaching	16	4
19....	19	19.5	Keeps up to date	15	6
20....	21	15.5	Has executive ability	14	7
21....	21	19.5	Is a good disciplinarian	14	6
22 . .	21	25.5	Is good looking	14	4
23 ...	23.5	12	Conducts extra-curricular activities	13	8
24....	23.5	19.5	Makes good assignments	13	6
25 .	25.5	25.5	Especially trained for primary work	8	4
26 ..	25.5	25.5	Is intelligent—Has a high IQ	8	4
27. . .	27	25.5	Has a good moral character	7	4
28. . .	28	25.5	Allows for individual differences	6	4
29 .	29	29.5	Has a pleasant voice	4	2
30 ...	30	29.5	Has initiative and originality	3	2

Total number of teachers rated . . . . . 156  
 Total number of reasons for superiority listed by two or more  
 superintendents . . . . . 30

TABLE IV

REASONS FOR INFERIORITY OF 10 POOREST TEACHERS IN ONE-TEACHER  
SCHOOLS LISTED BY 16 COUNTY SUPERINTENDENTS

No.	RANK AS TO NUMBER		ITEM	No OF TEACHERS	No OF SUPERIN- TENDENTS
	Teachers	Superin- tendents			
1....	1	1	Is poorly prepared in subject matter	56	14
2. ..	2	2 5	Is not trained for the rural job	53	12
3....	3	4	Poor personality	44	11
4....	4	2 5	Does not understand the rural situation	24	12
5 ...	5	6	Is lazy	20	9
6....	6	8.5	Does not get along with children	18	7
7....	7	5	Is a poor disciplinarian	14	10
8. ..	9	12 5	Has no executive ability	12	6
9 ..	9	12 5	Does not prepare her work	12	6
10....	9	17 5	Does not cooperate with patrons	12	5
11 ..	12	12 5	Has divided interests	11	6
12. ..	12	12 5	Does not cooperate with school authorities	11	6
13....	12	8.5	Uses poor methods of teaching	11	7
14....	14	12 5	Will not assume responsibility	10	6
15 ...	16	12 5	Has poor health	9	6
16 ...	16	17 5	Not intelligent—has a low I Q	9	5
17....	16	25	Lacks enthusiasm	9	3
18....	18 5	20	Is not a social success	8	4
19 ...	18 5	20	Lacks experience	8	4
20. ..	21	17 5	Poor personal appearance	6	5
21 ..	21	17 5	Is a city girl in the country	6	5
22 ...	21	25	Was trained for a city job	6	3
23 ...	24 5	20	Is too old	5	4
24 ...	24 5	25	Resents supervision	5	3
25 ...	24 5	25	Has no professional spirit	5	3
26 ..	24 5	25	Is too young	5	3
27....	27.5	25	Has poor moral character	4	3
28....	27 5	25	Has a poor voice	4	3

Total number of teachers rated . . . . . 148

Total number of reasons for inferiority listed by two or more  
superintendents . . . . . 28

one-room and the graded schools These persons were asked to pick out those things which, in their judgment, would not be done by a grade teacher in a city school, or at least would be done so

differently that the training for a grade teacher would not insure their correct performance.

The detailed list of activities of teachers in general as shown by the Charters study was submitted to 5 of the 20 persons mentioned above, and the same test—that is, whether or not the activity is unique to the one-teacher school—was applied to the several thousand activities, duties, and responsibilities enumerated.

Eighty graduate students at Teachers College, Columbia University, and at the Michigan State Teachers College at Ypsilanti, and 23 teachers of one-teacher schools in three states submitted answers to the question: "What activities, duties, and responsibilities do you think a rural one-room teacher must accept which need not be performed by a grade teacher in a town or city? Please name as many things as you can think of. If you are not sure, put it down anyway." The responses to this request were tabulated.

A composite list containing all the items mentioned in the three lists just discussed was prepared and submitted to experts in rural education. Certain combinations and a few additions and subtractions were made on the basis of a consensus of opinion.

Realizing the difficulty of securing reliable answers to a list so long, it was decided to make the answers possible by placing a check in the proper place. It seemed desirable not only to know whether the activities were performed, but to discover, if possible, the attitude of the teacher toward the activity, whether performed or not. It seemed of value, also, to know whether the performance of the activity was deemed of importance and whether it was difficult of performance. Accordingly, the check list was made with five columns for checks, with the instructions: "(1) If you do it, make a check in Column 1. (2) If you do not do it but think you ought to do it, place a check in Column 2. (3) If you think someone else should do it, place a check in Column 3. (4) If you consider it of importance that you should do it, place a check in Column 4. (5) If you find it difficult, place a check in Column 5."

The answers to the first column are simple matters of fact and, as a consequence, are, no doubt, as reliable as any questionnaire returns can be made. The answers to the other columns involve a matter of opinion and must be evaluated as such.

Approximately 1,500 check lists were sent out. Something over

1,100 of these were sent to teachers of one-teacher schools. From these, 550 fairly complete and intelligent returns were received and tabulated. The results are shown in Table V. Since comparisons are to be made between groups involving different numbers of returned check lists, it has been thought best to reduce all figures to percentages. So in Table V and succeeding tables the percentages are the per cent of the whole number of check lists involved in that particular tabulation which showed a check on the particular item. Thus only positive answers are counted. Failure to check a particular column for any item in the list may be an indication that the person answering does not perform that activity, or it may mean, merely, that he does not understand the question or is unwilling to take time or effort to answer certain of the items. In other words, it seems likely that the percentages given are a minimum rather than a maximum of those who actually do perform the activity, accept the responsibility, or hold the opinion in question.

#### RETURNS FROM ONE-TEACHER SCHOOLS

Table V presents the data received from 550 teachers of one-teacher schools. Regarding Column 1, in reply to the question whether or not they actually do the thing, the replies are probably as complete and accurate as one could hope to secure from any set of questions. With reference to Column 2, in answer to the question whether or not the persons reporting thought they ought to undertake the activity, although they do not perform it, and Column 3, whether or not they thought someone else should be responsible for it, the answers seemed to be a fair expression of opinion and to fit logically with the facts reported in Column 1. In more than half the returns, not a single check was made in Columns 4 and 5. There was some evidence that the persons answering were unwilling to take the trouble to do as much work as was necessary to answer all questions. There was also some evidence that the intent of the questions in those columns was not clear, and they were not answered. A considerable number of the persons answering seemed to make no distinction between the importance asked for in Column 4 and the difficulty asked for in Column 5. The writer feels that the responses to the first three columns constitute an accurate and adequate report of activity and attitudes, but that there is some doubt that the responses to

TABLE V

PER CENT OF 550 TEACHERS IN ONE-TEACHER SCHOOLS WHO UNDERTAKE THE DUTIES, ACTIVITIES, AND RESPONSIBILITIES OR EXPRESS OPINIONS CONCERNING ITEMS IN THE CHECK LIST

COLUMN 1. "If you do it"

COLUMN 2. "If you do not, but think you ought to do it"

COLUMN 3. "If you think someone else should do it."

COLUMN 4. "If you consider it of importance"

COLUMN 5. "If you find it difficult to do"

No.	ITEM	COLUMN				
		1	2	3	4	5
	<i>Activities Often Performed by Administrator or Supervisor:</i>					
1.	Meet with the school board . . . . .	48	30	2	28	15
2.	Advise school board as to needs of the school	78	17	3	29	5
3.	Advise the school board as to school law . .	26	12	16	22	8
4.	Determine holidays and vacations . . . . .	38	11	21	16	5
5.	Order school supplies . . . . .	65	13	8	21	6
6.	Purchase school supplies . . . . .	37	9	30	15	5
7.	Act as purchasing agent for pupils . . . . (textbooks, etc)	42	28	21	16	5
8.	Receive and audit school supplies . . . . .	51	9	15	13	5
9.	Make final decision in cases of discipline . .	69	9	9	23	8
10.	Administer all punishment . . . . .	73	15	5	19	9
11.	Make final decision in cases of promotion and classification of pupils . . . . .	70	15	7	24	11
12.	Take responsibility for enforcement of com- pulsory education law . . . . .	39	7	30	26	10
13.	Take responsibility for enforcement of health and quarantine laws . . . . .	31	9	27	26	10
14.	Keep school census records . . . . .	39	8	32	21	5
15.	Keep clerical records for the school board . .	16	4	35	16	3
16.	Collect and account for school funds . . . .	13	6	32	14	4
17.	Investigate absences . . . . .	75	11	5	30	7
18.	Make the curriculum for the school . . . .	42	11	17	22	6
19.	Establish friendly personal relations with all the patrons of the school . . . . .	77	17	1	32	9
20.	Provide publicity for the school . . . . .	51	22	7	25	7
21.	Formulate plan for educational advancement of the community . . . . .	30	24	7	30	10
22.	Direct a campaign for the improvement of the school . . . . .	47	27	5	28	10
	<i>Activities Involved in Instruction of Classes</i>					
23.	Plan and execute work with little or no super- vision . . . . .	66	9	2	24	23
24.	Adjust daily program to accommodate several grades . . . . .	84	8	2	23	23
25.	Present subject matter in short periods . . .	75	3	1	12	25
26.	Adjust teaching technique to suit small classes	76	10	2	21	24

TABLE V (Continued)

No	ITEM	COLUMN				
		1	2	3	4	5
27.	Keep several other groups profitably busy while one is reciting . . . . .	82	12	1	25	23
28.	Adapt textbooks and printed courses of study to meet "out-of-school" knowledge of farm children . . . . .	50	23	6	29	22
29.	Select materials of instruction from the life of a farm community . . . . .	61	21	3	24	17
30.	Organize the school in harmony with the life of a farm community . . . . .	57	25	2	30	12
31.	Teach music . . . . .	49	24	9	30	13
32.	Teach art (drawing, construction, etc) . . . .	69	15	4	25	13
33.	Teach agriculture . . . . .	65	17	4	27	13
35.	Teach home economics (sewing, cooking, etc.)	30	24	8	23	15
34.	Provide for socializing children from isolated homes . . . . .	36	28	5	31	17
36.	Make a great part of the material needed for instruction . . . . .	52	12	9	17	19
37.	Adapt health work so it will function in the peculiar sanitary and economic conditions of the community . . . . .	65	19	4	26	17
38.	Teach social science so it will function in the rural community . . . . .	34	28	3	28	17
39.	Teach all subjects in eight grades . . . . .	73	5	1	16	49
	<i>School Activities but Not Teaching Classes</i>					
40.	Supervise playground activities of all ages and both sexes . . . . .	79	12	4	28	18
41.	Coach athletic teams . . . . .	27	14	12	20	12
42.	Coach dramatics . . . . .	37	13	9	21	12
43.	Prepare pupils for contests (music, spelling, etc) . . . . .	65	17	4	24	7
44.	Plan and manage entertainments to raise money for school supplies . . . . .	66	17	7	10	15
45.	Serve as school librarian . . . . .	73	10	9	18	7
46.	Keep all school records . . . . .	79	10	5	21	6
47.	Make all the school reports . . . . .	84	8	5	23	6
48.	Give standard tests and measures . . . .	53	23	11	23	8
49.	Score standard tests and measures . . . .	47	21	11	21	8
50.	Make decisions on the basis of tests and measures . . . . .	39	22	12	19	11
51.	Prepare and serve hot lunch . . . . .	32	25	10	26	17
52.	Provide material for first aid . . . . .	54	18	12	28	6
53.	Administer first aid . . . . .	71	10	3	21	6
54.	Care for children in emergencies due to sudden illness . . . . .	74	14	6	23	9
55.	Care for children in emergencies due to bad weather . . . . .	72	15	6	24	6

TABLE V (Continued)

No.	ITEM	COLUMN				
		1	2	3	4	5
56	Conduct Arbor Day activities . . . . .	63	17	3	22	7
57.	Conduct opening exercises profitable to all grades at the same time . . . . .	77	10	1	23	14
58.	Administer dental and other clinics during school hours . . . . .	21	7	21	20	11
59.	Prepare school exhibits and transport them to the county seat . . . . .	39	23	8	21	11
60.	Transport pupils to various centers for contests . . . . .	41	15	19	20	11
61.	Know well the home life of each child in the school . . . . .	65	24	2	30	14
<i>Activities Involved in Personal Relations*</i>						
62.	Live in a teacherage alone . . . . .	21	8	0	9	19
63.	Live in a home without modern conveniences	41	5	0	10	24
64	Share room with other person . . . . .	30	3	2	6	21
65.	Assist with housework at boarding place . .	39	4	5	7	13
66.	Depend on landlord or neighbors for transportation . . . . .	29	2	1	5	20
67.	Walk less than a mile to school . . . . .	37	8	1	6	1
68	Walk one mile but less than two miles to school . . . . .	18	3	0	2	12
69.	Walk two miles or more to school . . . . .	15	2	0	3	18
70.	Ride or drive a horse to school . . . . .	16	4	0	3	9
71.	Drive a car to school . . . . .	19	6	2	3	8
72.	Become a social leader for a group of young people . . . . .	35	25	5	23	15
73.	Become acquainted with and visit parents . .	78	17	1	25	10
74.	Establish friendly relations with school officials . . . . .	80	16	1	25	11
75.	Find or provide suitable recreation for self in community . . . . .	67	18	2	10	16
76.	Possess knowledge of all vocations in community sufficient to be interested in its activities	58	24	1	23	14
77.	Possess sufficient skill in many activities so that one may engage in duties of homes visited . . . . .	55	24	2	18	14
78.	Possess ability to do housework, including laundry, cooking, sewing, etc. . . . .	73	17	3	22	11
<i>Activities Involving Community Relations.</i>						
79.	Serve as a source of information for individuals in the community . . . . .	42	20	7	21	16
80.	Initiate action looking toward enforcing legal rights of children and defectives . . . . .	25	23	12	25	11
81.	Assume active leadership in movement for improvement of community health . . . . .	33	27	7	21	11

TABLE V (Continued)

No.	ITEM	COLUMN				
		1	2	3	4	5
82.	Assume active leadership in movement for improving recreational facilities for community . . . . .	26	27	11	22	15
83.	Assume active leadership in movement for economic improvement of community (cooperative marketing, etc) . . . . .	15	13	16	19	14
84.	Assume leadership in community organizations	25	17	14	21	11
85.	Plan and conduct institutes and short courses for improvement of adults . . . . .	8	13	20	21	14
86.	Assume leadership in social activities (parties, etc) . . . . .	33	18	12	18	10
87.	Serve as superintendent of Sunday School . . . . .	22	9	21	14	6
88.	Teach Sunday School class . . . . .	35	21	12	18	6
89.	Attend church and Sunday School . . . . .	69	21	6	17	5
90.	Sing in a church choir . . . . .	31	18	5	11	5
91.	Attend "Ladies' Aid" . . . . .	25	15	7	16	9
92.	Become a member of community clubs . . . . .	35	20	2	18	8
93.	Conduct entertainments for the community . . . . .	59	13	8	19	9
94.	Assume responsibility for behavior of audience at public meetings in schoolhouse . . . . .	56	13	12	21	10
95.	Make public talks or addresses . . . . .	27	16	9	20	17
	<i>Activities Concerning Buildings and Grounds</i>					
96.	Do all the janitor work . . . . .	59	3	27	13	15
97.	Find someone to do the janitor work . . . . .	20	6	14	7	11
98.	Employ a janitor . . . . .	18	8	17	10	6
99.	Supervise a janitor . . . . .	33	10	6	10	7
100.	Care for school grounds . . . . .	61	7	16	15	7
101.	Actively oversee school toilets . . . . .	83	7	7	19	6
102.	Supervise care of grounds . . . . .	84	9	4	18	6
103.	Oversee source of drinking water . . . . .	74	6	7	21	7
104.	Take full responsibility for sanitary condition of building and grounds . . . . .	60	4	16	19	7
105.	Make repairs . . . . .	17	5	31	11	5
106.	Supervise repairs . . . . .	30	10	21	12	5
107.	Regulate temperature and ventilation . . . . .	88	4	3	24	8
108.	Keep fire in stove or furnace . . . . .	72	3	15	17	8
109.	Start fires in the morning . . . . .	55	1	24	13	8
110.	Supervise building and keeping of fire . . . . .	52	7	10	14	6
111.	Protect school building against tramps and other marauders . . . . .	42	8	17	18	8
112.	Bring drinking water to school . . . . .	17	2	16	9	10

the last two are anything like a complete expression of opinion or that they are entirely accurate in the tendencies which they indicate. They are presented with the understanding just expressed,

and although of questionable value as a measure of facts, they should be of some value as a measure of attitudes of teachers.

COMPARISON OF ACTIVITIES OF TEACHERS IN ONE-TEACHER SCHOOLS  
WITH THOSE OF GRADE TEACHERS IN CITIES

Returns from grade teachers in towns were apparently checked with as much care as were those from the one-teacher schools, but since the items of the check list were selected as peculiar to the one-teacher school, we find, as expected, that on many of the items no checks appear, and on most there are but few. Columns 2, 4, and 5 have so few checks on any item that the percentage is below the limit of reliability, as set up in the next chapter, and is not reported in this study.

Table VI gives the percentages of replies to Columns 1 and 3 of the check list received from 200 grade teachers, and compares them with the percentages from teachers in one-teacher schools, as shown in the same columns of Table V.

An examination of Table VI shows that, in Column 1, of those who perform the activities indicated on 63 of the 112 items none of the grade teachers answer in the affirmative, and on but 13 items do as many as one-fourth of the grade teachers say that they perform the activity indicated. On the other hand, on only 15 of the items do less than one-fourth of the teachers of one-teacher schools indicate that they do perform the activities and accept the responsibilities indicated.

In Column 3, expressing the opinion that someone else should perform the activity indicated, we find that in most cases the attitude of the grade teacher is strongly against undertaking responsibilities which most one-room teachers accept as part of the job.

COMPARISON OF ACTIVITIES OF BEST AND POOREST TEACHERS

The returns of the check lists received from the teachers listed as best and as poorest were tabulated separately and are presented in Table VII. In order that the data from each of the five columns may be grouped for comparison, it is necessary to omit in this table the items of the check list, and to use only their corresponding numbers. The activity for any number may be readily found by referring to Table VI or Table VIII.

It is quite evident that there is a consistent tendency for the

TABLE VI

COMPARISON OF THE ACTIVITIES AND OPINIONS OF 550 TEACHERS IN ONE-TEACHER SCHOOLS WITH THOSE OF 200 GRADE TEACHERS IN TOWNS AND CITIES

COLUMN 1 "If you do it." \*

COLUMN 3 "If you think someone else should do it" \*

No	ITEM	COLUMN 1		COLUMN 3	
		Rural	City	Rural	City
	<i>Activities Often Performed by Administrator or Supervisor</i>				
1.	Meet with the school board . . . . .	48	0	2	30
2.	Advise school board as to the needs of the school . . . . .	78	0	3	41
3.	Advise the school board as to school law . . .	26	0	16	22
4.	Determine holidays and vacations . . . . .	38	0	21	30
5.	Order school supplies . . . . .	65	7	8	34
6.	Purchase school supplies . . . . .	37	0	30	37
7.	Act as purchasing agent for pupils (textbooks, etc.) . . . . .	42	0	21	22
8.	Receive and audit school supplies . . . . .	51	0	15	36
9.	Make final decision in cases of discipline . . .	69	9	9	50
10.	Administer all punishment . . . . .	73	12	5	28
11.	Make final decision in cases of promotion and classification of pupils . . . . .	70	11	7	49
12.	Take responsibility for enforcement of compulsory attendance law . . . . .	39	0	30	63
13.	Take responsibility for enforcement of health and quarantine laws . . . . .	31	0	27	55
14.	Keep school census record . . . . .	39	0	32	58
15.	Keep clerical records for the school board . . .	16	0	35	57
16.	Collect and account for school funds . . . . .	13	0	32	52
17.	Investigate absences . . . . .	75	27	5	33
18.	Make the curriculum for the school . . . . .	42	0	17	42
19.	Establish friendly personal relations with all the patrons of the school . . . . .	77	23	1	17
20.	Provide publicity for the school . . . . .	51	0	7	38
21.	Formulate plan for educational advancement of the community . . . . .	30	0	7	29
22.	Direct a campaign for the improvement of the school . . . . .	47	0	5	39
	<i>Activities Involved in Instruction of Classes</i>				
23.	Plan and execute work with little or no supervision . . . . .	66	11	2	21
24.	Adjust daily program to accommodate several grades . . . . .	84	5	2	10
25.	Present subject matter in short periods . . .	75	13	1	5
26.	Adjust teaching technique to suit small classes . . . . .	76	8	2	6
27.	Keep several groups profitably busy while one is reciting . . . . .	82	13	1	5

\* See Table V, pages 10, 11, 12, and 13, for further explanation of columns

TABLE VI (Continued)

No.	ITEM	COLUMN 1		COLUMN 3	
		Rural	City	Rural	City
28.	Adapt textbooks and printed courses of study to meet the "out-of-school" knowledge of farm children . . . . .	50	6	6	9
29	Select materials of instruction from the life of a farm community . . . . .	61	11	3	5
30.	Organize the school in harmony with the life of a farm community . . . . .	57	0	2	7
31.	Teach music . . . . .	49	30	9	17
32.	Teach art (drawing, constructing, etc) . . . . .	69	27	4	28
33.	Teach agriculture . . . . .	65	0	4	20
34.	Teach home economics (sewing, cooking, etc.) . . . . .	30	0	8	29
35.	Provide for socializing children from isolated homes . . . . .	36	0	5	10
36.	Make a great part of the material needed for instruction . . . . .	52	7	9	7
37.	Adapt health work so it will function in the peculiar sanitary and economic conditions of the community . . . . .	65	25	4	13
38.	Teach social science so it will function in the rural community . . . . .	34	0	3	9
39.	Teach all subjects in eight grades . . . . .	73	0	1	5
	<i>School Activities but Not Teaching Classes</i>				
40.	Supervise playground activities of all ages and both sexes . . . . .	79	19	4	42
41.	Coach athletic teams . . . . .	27	5	12	48
42.	Coach dramatics . . . . .	37	0	9	25
43.	Prepare pupils for contests (music, spelling, etc.) . . . . .	65	15	4	14
44.	Plan and manage entertainments to raise money to purchase school supplies . . . . .	66	7	7	36
45.	Serve as school librarian . . . . .	73	0	9	50
46.	Keep all school records . . . . .	79	5	5	54
47.	Make all school reports . . . . .	84	10	5	56
48.	Give standard tests and measures . . . . .	53	16	11	54
49.	Score standard tests and measures . . . . .	47	10	11	49
50.	Make decisions on the basis of tests and measures . . . . .	39	0	12	41
51.	Prepare and serve hot lunch . . . . .	32	0	10	19
52.	Provide material for first aid . . . . .	54	5	12	59
53.	Administer first aid . . . . .	71	26	3	43
54.	Care for children in emergencies due to sudden illness . . . . .	74	26	6	25
55.	Care for children in emergencies due to bad weather . . . . .	72	25	6	17
56.	Conduct Arbor Day exercises . . . . .	63	8	3	11

TABLE VI (Continued)

No.	ITEM	COLUMN 1		COLUMN 3	
		Rural	City	Rural	City
57.	Conduct opening exercises profitable to all grades at the same time . . . . .	77	0	1	13
58.	Administer dental and other clinics during school hours . . . . .	21	5	21	21
59.	Prepare school exhibits and transport them to the county seat . . . . .	39	9	8	10
60.	Transport pupils to various centers for contests . . . . .	41	0	19	11
61.	Know well the home life of each child in the school . . . . .	65	10	2	8
<i>Activities Involved in Personal Relations:</i>					
62.	Live in a teacherage alone . . . . .	21	0	0	0
63.	Live in a home without modern conveniences.	41	0	0	0
64.	Share room with other person . . . . .	30	15	2	0
65.	Assist with housework at boarding place . .	39	8	5	0
66.	Depend on landlord or neighbors for transportation . . . . .	29	0	1	0
67.	Walk less than one mile to school . . . . .	37	62	0	0
68.	Walk one mile but less than two miles to school . . . . .	18	0	0	0
69.	Walk two miles or more to school . . . . .	15	0	0	0
70.	Ride or drive a horse to school . . . . .	18	0	0	0
71.	Drive a car to school . . . . .	19	6	2	2
72.	Become a social leader for a group of young people . . . . .	35	0	5	7
73.	Become acquainted with and visit parents. . .	78	25	1	5
74.	Establish friendly relations with school officials . . . . .	80	25	1	5
75.	Find or provide suitable recreation for self in community . . . . .	67	30	2	3
76.	Possess knowledge of all vocations in community sufficient to be interested in its activities . . . . .	58	15	1	3
77.	Possess sufficient skill in many activities so that one may engage in duties of homes visited . . . . .	55	11	2	3
78.	Possess ability to do housework, including laundry, cooking, sewing, etc. . . . .	73	37	3	3
<i>Activities Involving Community Relations:</i>					
79.	Serve as source of information for individuals in the community . . . . .	42	0	7	8
80.	Initiate action looking towards enforcing legal rights of children and defectives . . . . .	25	0	12	19
81.	Assume active leadership in movement for improvement of community health . . . . .	33	0	7	20

TABLE VI (Continued)

No.	ITEM	COLUMN 1		COLUMN 3	
		Rural	City	Rural	City
82.	Assume active leadership in movement for improving recreational facilities of community . . . . .	26	0	11	18
83.	Assume active leadership in movement for economic improvement of community (cooperative marketing, etc) . . . . .	15	0	16	17
84.	Assume leadership in community organizations	25	0	14	15
85.	Plan and conduct institutes and short courses for improvement of adults . . . . .	8	0	20	34
86.	Assume leadership in social activities (parties, etc) . . . . .	33	0	12	10
87.	Serve as superintendent of Sunday School	22	0	21	14
88.	Teach Sunday School class . . . . .	35	6	12	12
89.	Attend church and Sunday School . . . . .	69	25	6	5
90.	Sing in a church choir . . . . .	31	5	5	11
91.	Attend "Ladies' Aid" . . . . .	25	0	7	7
92.	Become a member of community clubs . . . . .	35	10	2	5
93.	Conduct entertainments for the community . . . . .	59	0	8	11
94.	Assume responsibility for behavior of audience at public meetings in the schoolhouse . . . . .	56	11	12	13
95.	Make public talks and addresses . . . . .	27	0	9	10
	<i>Activities Concerning Buildings and Grounds:</i>				
96.	Do all the janitor work . . . . .	59	0	27	44
97.	Find someone to do the janitor work . . . . .	20	0	14	40
98.	Employ a janitor . . . . .	18	0	17	45
99.	Supervise a janitor . . . . .	33	0	6	43
100.	Care for school grounds . . . . .	61	0	16	39
101.	Actively oversee school toilets . . . . .	83	0	7	42
102.	Supervise care of grounds . . . . .	84	0	4	44
103.	Oversee source of drinking water . . . . .	74	0	7	39
104.	Take full responsibility for sanitary condition of building and grounds . . . . .	60	0	16	51
105.	Make repairs . . . . .	17	0	31	46
106.	Supervise repairs . . . . .	30	0	21	40
107.	Regulate temperature and ventilation . . . . .	88	20	3	42
108.	Keep fire in stove or furnace . . . . .	72	0	15	46
109.	Start fires in the morning . . . . .	55	0	24	45
110.	Supervise building and keeping of fires . . . . .	52	0	10	43
111.	Protect school building against tramps and other marauders . . . . .	42	0	17	40
112.	Bring drinking water to school . . . . .	17	0	16	21

best teachers to undertake more activities, and for the poorest to think they ought to undertake them or to think someone else ought to do them. That is, there is a marked difference not only in what

TABLE VII

COMPARISON OF ACTIVITIES AND OPINIONS OF 94 BEST AND 84 POOREST  
TEACHERS IN ONE-TEACHER SCHOOLS

COLUMN 1. "If you do it"  
 COLUMN 2. "If you do not do it, but think you ought to do it"  
 COLUMN 3. "If you think someone else should do it"  
 COLUMN 4. "If you think it important"  
 COLUMN 5. "If you find it difficult"

ITEM No.	COLUMN 1		COLUMN 2		COLUMN 3		COLUMN 4		COLUMN 5	
	Best	Poorest	Best	Poorest	Best	Poorest	Best	Poorest	Best	Poorest
1...	58	49	17	43	1	7	21	24	6	19
2...	83	83	9	13	1	5	21	31	2	5
3...	36	19	7	18	6	36	21	26	9	5
4...	29	24	14	14	12	36	12	12	4	5
5 ..	66	62	11	17	4	14	9	19	6	7
6 ..	40	38	5	11	10	13	6	12	4	5
7 ..	43	32	6	19	12	43	4	19	2	2
8...	57	60	2	13	10	29	3	14	6	5
9...	73	71	4	8	4	12	14	21	9	12
10 ..	64	74	6	12	1	12	11	15	10	7
11 ..	68	67	14	18	2	17	18	27	11	12
12 ..	36	40	9	15	14	37	12	24	11	5
13 ..	36	33	5	10	14	51	9	36	6	6
14...	30	36	10	12	9	55	11	34	2	5
15...	17	12	2	4	18	67	11	17	4	5
16 ..	11	17	5	3	20	55	7	19	6	5
17...	75	75	7	20	2	7	17	32	4	11
18 ..	45	43	4	12	3	36	17	29	9	2
19 ..	82	77	6	22	0	0	26	36	7	10
20 ..	71	48	10	31	1	14	17	26	9	8
21...	39	33	14	32	3	14	12	26	11	17
22...	51	48	16	25	2	18	14	31	11	12
23...	66	60	7	5	0	5	18	24	16	17
24 ..	81	92	10	10	0	7	14	18	11	28
25...	75	76	2	4	0	7	14	18	11	28
26...	66	80	9	7	0	12	11	28	13	17
27...	87	86	6	14	0	5	18	28	11	20
28...	83	50	21	25	4	10	19	39	14	12
29...	68	67	21	17	1	2	21	32	13	10
30...	64	58	22	24	0	5	21	38	6	10
31...	61	50	22	24	5	19	26	36	9	17
32...	55	68	18	13	3	10	18	26	11	12
33...	57	42	18	14	4	17	18	30	10	5
34...	31	21	20	21	4	14	19	28	17	14
35...	53	40	17	24	3	7	26	38	11	14
36 ..	49	57	12	7	1	19	11	15	18	10
37...	68	63	13	23	0	1	18	28	9	14
38...	38	31	22	30	3	8	18	24	15	12
39...	64	65	0	8	0	2	9	19	39	36
40...	77	87	14	11	2	11	21	29	25	12

TABLE VII (Continued)

ITEM No.	COLUMN 1		COLUMN 2		COLUMN 3		COLUMN 4		COLUMN 5	
	Best	Poorest	Best	Poorest	Best	Poorest	Best	Poorest	Best	Poorest
41...	56	17	11	10	9	25	18	19	17	14
42...	81	64	11	10	6	14	24	17	15	14
43...	76	54	12	22	1	10	20	23	14	8
44...	74	63	13	26	3	12	15	24	18	15
45...	67	70	8	11	11	17	14	12	19	12
46...	83	80	7	10	2	12	18	21	14	2
47...	85	89	6	8	2	10	18	24	15	2
48...	70	42	25	27	4	30	18	32	18	10
49...	64	29	22	21	3	26	18	28	21	8
50...	56	30	21	16	0	30	13	25	18	5
51...	32	26	25	25	7	17	34	25	29	13
52...	60	40	15	13	9	22	27	27	13	10
53...	81	77	11	9	2	12	15	23	16	11
54...	78	73	7	17	3	13	13	25	19	13
55...	81	70	8	19	3	16	16	20	11	8
56...	65	59	21	23	1	10	18	32	23	17
57...	70	71	7	11	0	5	4	34	24	20
58...	31	33	4	10	13	34	19	26	20	16
59...	35	30	20	26	1	18	9	31	20	16
60...	49	32	10	18	7	41	15	25	19	13
61...	64	72	25	25	0	8	18	41	30	17
62...	22	15	14	15	0	0	9	15	20	12
63...	51	35	4	10	0	2	13	16	29	19
64...	43	30	3	8	4	2	9	10	29	15
65...	41	44	10	2	1	12	9	5	30	8
66...	35	26	6	5	1	0	4	10	20	24
67...	33	33	7	8	1	5	0	15	2	2
68...	20	7	3	2	0	0	2	2	22	10
69...	19	20	2	5	0	0	0	5	22	8
70...	20	29	4	8	0	2	0	8	18	10
71...	29	29	7	5	2	5	4	2	12	8
72...	45	31	22	27	7	10	22	21	19	21
73...	82	65	16	32	0	5	27	27	24	8
74...	80	77	11	22	0	7	22	37	18	5
75...	67	74	27	18	0	5	18	29	18	14
76...	62	65	24	29	1	8	20	37	27	8
77...	49	51	31	27	2	5	18	32	25	8
78...	63	83	29	16	1	9	16	28	27	5
79...	60	56	9	21	6	11	13	24	20	14
80...	45	29	21	31	6	20	22	26	9	10
81...	50	32	25	41	4	10	15	34	20	14
82...	51	25	24	31	3	16	17	32	30	21
83...	17	26	19	17	15	29	11	23	23	10
84...	36	30	18	21	10	21	13	24	18	8
85...	13	12	7	15	20	31	13	25	16	17
86...	38	37	19	21	6	25	13	21	20	8
87...	23	26	4	17	20	23	10	23	10	5

TABLE VII (Continued)

ITEM No	COLUMN 1		COLUMN 2		COLUMN 3		COLUMN 4		COLUMN 5	
	Best	Poorest	Best	Poorest	Best	Poorest	Best	Poorest	Best	Poorest
88...	51	34	8	24	15	17	7	26	14	2
89...	85	70	13	22	1	5	13	19	1	0
90...	38	49	13	12	4	10	8	15	8	5
91...	38	19	10	17	6	20	9	16	11	10
92 ..	49	36	0	23	0	5	14	23	18	10
93...	72	65	3	21	3	12	10	27	11	12
94...	70	62	7	19	7	16	13	21	18	5
95...	57	37	4	26	4	10	13	22	19	23
96 ..	45	67	4	0	21	48	13	12	17	15
97...	28	23	8	2	13	37	3	14	11	10
98 ..	32	23	6	7	13	35	2	16	11	8
99...	44	42	15	16	4	11	7	14	13	6
100...	65	75	4	5	11	28	11	21	11	8
101...	85	88	7	11	2	18	13	26	11	0
102 ..	72	89	7	9	2	9	13	18	11	9
103 ..	79	88	4	11	3	18	13	28	12	6
104 ..	68	66	3	5	11	31	19	22	15	8
105 ..	23	26	2	8	24	57	9	13	10	8
106...	35	35	10	24	13	31	11	16	12	8
107. .	90	88	4	12	4	8	15	31	13	9
108 ..	77	74	4	8	8	26	11	20	15	11
109 ..	40	48	2	2	23	43	11	15	15	9
110 ..	54	58	6	8	12	26	8	15	13	0
111...	53	40	2	14	11	32	14	20	13	15
112...	23	26	0	0	11	27	13	12	13	6

best and poorest teachers do, but even more marked difference in their attitude toward the job. Poorest teachers in the one-teacher schools resemble more closely grade teachers in city schools, both as to activity and as to attitude, than do best teachers in the one-teacher schools.

#### COMPARISON OF ACTIVITIES OF TEACHERS OF ONE-TEACHER SCHOOLS IN FIVE DIFFERENT STATES

The question as to whether or not the job of the teacher in the one-teacher school varies greatly from state to state is of importance. Examination of the returns showed that we have 40 or more check lists from the one-teacher schools of five states well distributed geographically. So 40 check lists each from New York, Montana, Wisconsin, Oregon, and Arkansas were selected at random from the entire returns from those states and tabulated separately. The number is so small that only Column 1, "If you do

TABLE VIII

PERCENTAGES OF TEACHERS IN ONE-TEACHER SCHOOLS IN FIVE DIFFERENT STATES WHO PERFORM THE ACTIVITIES INDICATED

COLUMN 1 "If you do it."

No.	ITEM	NEW YORK	MON-TANA	WIS-CONSIN	ORE-GON	ARKAN-SAS
<i>Activities Often Performed by Administrator or Supervisor</i>						
1.	Meet with the school board . . . . .	88	68	78	40	40
2.	Advise school board as to the needs of the school . . . . .	85	88	93	85	85
3.	Advise the school board as to school law	33	35	30	38	40
4.	Determine holidays and vacations . . . .	55	58	53	48	28
5.	Order school supplies . . . . .	70	93	93	63	55
6.	Purchase school supplies . . . . .	45	45	60	45	45
7.	Act as purchasing agent for pupils (textbooks, etc) . . . . .	54	63	78	55	40
8.	Receive and audit school supplies . . . .	50	63	68	48	50
9.	Make final decision in cases of discipline	83	83	75	78	73
10.	Administer all punishment . . . . .	80	90	88	85	70
11.	Make final decision in cases of promotion and classification of pupils . . .	78	85	70	80	68
12.	Take responsibility for enforcement of compulsory attendance law . . . . .	60	43	45	43	28
13.	Take responsibility for enforcement of health and quarantine laws . . . . .	35	38	43	43	38
14.	Keep school census records . . . . .	80	68	38	40	33
15.	Keep clerical records for the school board . . . . .	18	28	15	23	10
16.	Collect and account for school funds . .	13	33	10	13	15
17.	Investigate absences . . . . .	78	95	93	80	83
18.	Make the curriculum for the school . .	70	45	45	58	23
19.	Establish friendly personal relations with all the patrons of the school . . .	85	88	85	85	83
20.	Provide publicity for the school . . . .	53	48	58	50	73
21.	Formulate plans for educational advancement of community . . . . .	33	30	45	30	40
22.	Direct campaign for the improvement of the school . . . . .	63	48	53	55	73
<i>Activities Involved in Instruction of Classes</i>						
23.	Plan and execute work with little or no supervision . . . . .	70	50	68	73	73
24.	Adjust a daily program to accommodate several grades . . . . .	90	90	78	93	88
25.	Present subject matter in short periods	85	80	85	88	68
26.	Adjust teaching technique to suit small classes . . . . .	88	83	75	88	83

TABLE VIII (Continued)

No	ITEM	NEW YORK	MON- TANA	WIS- CONSIN	ORE- GON	ARKAN- SAS
27.	Keep several other groups profitably busy while one is reciting . . . .	90	95	88	93	83
28.	Adapt textbooks and printed courses of study to meet out-of-school knowledge of farm children . . . .	65	65	58	55	53
29.	Select materials of instruction from the life of the farm community . . . .	75	68	63	55	85
30.	Organize the school in harmony with the life of a farm community . . . .	70	70	53	58	63
31.	Teach music . . . . .	28	60	68	35	40
32.	Teach art (drawing, construction, etc.) . . . . .	88	85	63	68	60
33.	Teach agriculture . . . . .	78	88	88	70	68
34.	Teach home economics (sewing, cooking, etc.) . . . . .	53	15	23	23	45
35.	Provide for socializing children from isolated homes . . . . .	40	18	35	23	50
36.	Make a great part of the material needed for instruction . . . . .	73	40	55	53	40
37.	Adapt health work so that it will function in the peculiar sanitary and economic conditions of the community . . . . .	73	78	68	85	78
38.	Teach social science so that it will function in the rural community . . . .	40	18	48	23	33
39.	Teach all subjects in all grades . . . . .	75	85	80	95	68
	<i>School Activities but not Teaching Classes</i>					
40.	Supervise playground activities of all ages and both sexes . . . . .	93	80	75	83	85
41.	Coach athletic teams . . . . .	25	20	10	15	15
42.	Coach dramatics . . . . .	43	53	15	50	50
43.	Prepare pupils for contests (music, spelling, etc.) . . . . .	63	60	83	75	70
44.	Plan and manage entertainments to raise money for school supplies . . . .	63	65	85	75	65
45.	Serve as school librarian . . . . .	80	93	95	90	65
46.	Keep all school records . . . . .	80	90	78	88	80
47.	Make all school reports . . . . .	93	85	88	88	83
48.	Give standard tests and measures . . . . .	60	55	85	75	68
49.	Score standard tests and measures . . . . .	55	40	73	65	73
50.	Make decisions on basis of tests and measures . . . . .	33	55	65	40	53
51.	Prepare and serve hot lunch . . . . .	53	35	30	48	23
52.	Provide material for first aid . . . . .	68	55	40	68	53
53.	Administer first aid . . . . .	88	80	75	83	68
54.	Care for children in emergencies due to sudden illness . . . . .	80	85	89	85	68

TABLE VIII (Continued)

No.	ITEM	NEW YORK	MON- TANA	WIS- CONSIN	ORE- GON	ARKAN- SAS
55	Care for children in emergencies due to bad weather . . . . .	68	85	83	85	70
56.	Conduct Arbor Day activities . . . . .	83	78	85	65	73
57.	Conduct opening exercises profitable to all grades at the same time . . . . .	35	88	90	88	75
58.	Administer dental and other clinics during school hours . . . . .	18	23	10	30	45
59.	Prepare school exhibits and transport them to the county seat . . . . .	50	30	75	25	50
60.	Transport pupils to various centers for contests . . . . .	40	20	50	40	50
61.	Know well the home life of each child in the school . . . . .	78	80	90	78	80
	<i>Activities Involved in Personal Relations:</i>					
62.	Live in a teacherage alone . . . . .	0	55	15	10	25
63.	Live in a house without modern conveniences . . . . .	30	55	45	38	55
64.	Share room with other person . . . . .	15	55	20	5	40
65.	Assist with housework at boarding place	45	40	45	30	25
66.	Depend on landlord or neighbors for transportation . . . . .	8	68	20	28	33
67.	Walk less than one mile to school . . .	50	40	70	40	35
68.	Walk one mile but less than two miles to school . . . . .	10	20	18	15	10
69.	Walk two miles or more to school . . .	8	5	15	5	23
70.	Ride or drive a horse to school . . . . .	15	20	0	10	25
71.	Drive a car to school . . . . .	53	13	15	38	15
72.	Become a social leader for a group of young people . . . . .	43	30	40	30	33
73.	Become acquainted with and visit parents . . . . .	78	75	88	83	68
74.	Establish friendly relations with school officials . . . . .	73	80	93	95	83
75.	Find or provide suitable recreation for self in community . . . . .	53	85	78	80	73
76.	Possess knowledge of all vocations of the community sufficient to be interested in its activities . . . . .	48	73	70	65	73
77.	Possess sufficient skill in many activities so that one may engage in the duties of the homes visited . . . . .	78	80	55	63	55
78.	Possess ability to do housework (including laundry, cooking, sewing, etc.) .	83	93	70	80	85

TABLE VIII (Continued)

No.	ITEM	NEW YORK	MON- TANA	WIS- CONSIN	ORE- GON	ARKAN- SAS
	<i>Activities Involving Community Relations:</i>					
79.	Serve as a source of information for individuals in the community . . . .	38	50	43	23	38
80.	Initiate action looking forward to enforcing legal rights of children and defectives . . . . .	13	20	43	8	30
81.	Assume active leadership in movements for improvement of community health	30	33	45	40	48
82.	Assume active leadership in movement for improving recreational facilities	15	25	25	28	30
83.	Assume active leadership in movement for economic improvement of community (cooperative marketing, etc )	5	5	25	5	20
84.	Assume leadership in community organizations . . . . .	13	28	45	28	28
85.	Plan and conduct institutes and short courses for improvement of adults .	0	5	3	0	10
86.	Assume leadership in social activities (parties, etc ) . . . . .	48	40	45	38	30
87.	Serve as superintendent of Sunday School . . . . .	0	10	5	0	28
88.	Teach Sunday School class . . . . .	45	30	35	25	53
89.	Attend church and Sunday School . . .	88	50	68	38	83
90.	Sing in a church choir . . . . .	35	25	30	38	40
91.	Attend "Ladies' Aid" . . . . .	28	33	45	13	40
92.	Become a member of community clubs	33	50	40	40	50
93.	Conduct entertainments for the community . . . . .	50	73	73	63	55
94.	Assume responsibility for behavior of audience at public meetings in school-house . . . . .	55	48	73	68	63
95.	Make public talks or addresses . . . .	18	25	40	36	48
	<i>Activities Concerning Buildings and Grounds:</i>					
96.	Do all janitor work . . . . .	53	83	60	70	58
97.	Find someone to do the janitor work .	15	10	13	25	35
98.	Employ a janitor . . . . .	13	10	20	15	25
99.	Supervise a janitor . . . . .	33	18	28	28	40
100.	Care for the school grounds . . . . .	58	75	88	75	68
101.	Actively oversee school toilets . . . .	75	88	90	93	83
102.	Supervise care of grounds . . . . .	55	80	85	85	73
103.	Oversee source of drinking water . . .	70	75	95	50	80
104.	Take full responsibility for sanitary condition of building and grounds . . . .	85	78	65	73	58

TABLE VIII (Continued)

No	ITEM	NEW YORK	MON- TANA	WIS- CONSIN	ORE- GON	ARKAN- SAS
105	Make repairs . . . . .	15	20	20	10	30
106.	Supervise repairs . . . . .	5	40	50	30	30
107.	Regulate temperature and ventilation ..	95	88	95	98	73
108.	Keep fire in stove or furnace . . . . .	68	90	90	85	60
109.	Start fires in the morning . . . . .	43	90	80	75	45
110.	Supervise building and keeping of fires	53	33	38	43	68
111.	Protect school building against tramps and other marauders . . . . .	38	60	58	25	40
112.	Bring drinking water to school . . . . .	8	30	15	10	20

it," has a high enough degree of reliability to be worth presenting. The results are given in Table VIII shown on pages 22, 23, 24, 25, and 26.

Although the differences between the replies from some of the states appear rather large, the application of the measures of reliability set up in the next chapter show very few differences greater than might be due to inadequacy of sampling, and hence of no significance beyond the possible indication of a tendency. On the other hand, the differences between states is in no case as great as those existing between grade teachers in cities and teachers of one-teacher schools in the same state. The differences between states are less than the differences between best and poorest teachers, and little, if any, are greater than the differences between halves of the total number of teachers from one-teacher schools when measured half against half.

COMPARISON OF ACTIVITIES PERFORMED BY TEACHERS IN ONE-  
TEACHER SCHOOLS WHEN ONE-HALF OF THE RETURNS, 292  
CASES, IS MEASURED AGAINST THE OTHER HALF, 258 CASES

After 292 check lists had been received, a tabulation was made. The last 258 returns were tabulated later. The results of Column 1, "If you do it," are presented in Table IX. As a measure of reliability this table is discussed in the next chapter.

Although the number of check lists involved in this comparison is the same as that compiled in Table III, these check lists are not the report of exactly the same returns. This is due to the fact that the original tabulations had a few more than 550 cases and the subtractions were not identical in the two tables, and it follows

TABLE IX

COMPARISON OF PERCENTAGES OF TEACHERS IN ONE-TEACHER SCHOOLS WHO PERFORM CERTAIN ACTIVITIES WHEN THE TOTAL OF 550 IS DIVIDED BY CHANCE SELECTION INTO TWO GROUPS, ONE OF 292 AND THE OTHER OF 258

COLUMN 1. "If you do it."

No	ITEM	GROUP I 292	GROUP II 258
<i>Activities Often Performed by Administrator or Supervisor.</i>			
1.	Meet with the school board . . . . .	43	55
2.	Advise school board as to needs of the school . . . . .	83	74
3.	Advise the school board as to school law . . . . .	25	27
4.	Determine holidays and vacations . . . . .	33	45
5.	Order school supplies . . . . .	61	69
6.	Purchase school supplies . . . . .	34	40
7.	Act as purchasing agent for pupils (text-books, etc) . . . . .	35	49
8.	Receive and audit school supplies . . . . .	51	51
9.	Make final decisions in cases of discipline . . . . .	68	70
10.	Administer all punishment . . . . .	76	70
11.	Make final decisions in cases of promotion and classification of pupils . . . . .	68	76
12.	Take responsibility for enforcement of compulsory attendance law . . . . .	45	33
13.	Take responsibility for enforcement of health and quarantine laws . . . . .	36	25
14.	Keep school census records . . . . .	39	36
15.	Keep clerical records of school board . . . . .	16	15
16.	Collect and account for school funds . . . . .	12	15
17.	Investigate absences . . . . .	80	70
18.	Make curriculum for the school . . . . .	47	37
19.	Establish friendly personal relations with all the patrons of the school . . . . .	71	83
20.	Provide publicity for the school . . . . .	52	48
21.	Formulate plan for educational advancement of community . . . . .	28	33
22.	Direct a campaign for improvement of the school . . . . .	43	52
<i>Activities Involved in Instruction of Classes.</i>			
23.	Plan and execute work with little or no supervision . . . . .	69	62
24.	Adjust daily program to accommodate several grades . . . . .	80	88
25.	Present subject matter in short periods . . . . .	81	69
26.	Adjust teaching technique to suit small classes . . . . .	85	77
27.	Keep several other groups profitably busy while one is reciting . . . . .	73	78

TABLE IX (Continued)

No.	ITEM	GROUP I 292	GROUP II 258
28.	Adapt textbooks and printed courses of study to fit the out-of-school knowledge of farm children . . . . .	53	47
29	Select materials for instruction from life of a farm community . . . . .	63	58
30.	Organize the school in harmony with the life of a farm community . . . . .	51	63
31.	Teach music . . . . .	50	48
32.	Teach art (drawing, construction, etc) . . . . .	63	75
33.	Teach agriculture . . . . .	53	79
34.	Teach home economics (sewing, cooking, etc) . . . . .	34	26
35.	Provide for socializing children from isolated homes . . . . .	39	33
36.	Make a great part of the material needed for instruction . . . . .	59	45
37.	Adapt health work so it will function in the peculiar sanitary and economic conditions of the community . . . . .	60	73
38.	Teach social science so it will function in the rural community . . . . .	38	30
39.	Teach all subjects in all grades . . . . .	77	70
<i>School Activities but Not Teaching Classes:</i>			
40.	Supervise playground activities of all ages and both sexes . . . . .	86	76
41.	Coach athletic teams . . . . .	33	18
42.	Coach dramatics . . . . .	36	38
43.	Prepare pupils for contests (music, spelling, etc.) . . . . .	66	64
44.	Plan and manage entertainments to raise money for school supplies . . . . .	63	69
45.	Serve as school librarian . . . . .	70	78
46.	Keep all school records . . . . .	83	77
47.	Make all school reports . . . . .	78	90
48.	Give standard tests and measures . . . . .	58	46
49.	Score standard tests and measures . . . . .	51	41
50.	Make decisions on basis of tests and measures . . . . .	42	33
51.	Prepare and serve hot lunch . . . . .	28	38
52.	Provide material for first aid . . . . .	48	56
53.	Administer first aid . . . . .	72	69
54.	Care for children in emergencies due to sudden illness . . . . .	80	71
55.	Care for children in emergencies due to bad weather . . . . .	75	67
56.	Conduct Arbor Day activities . . . . .	60	67
57.	Conduct opening exercises profitable to all grades at the same time . . . . .	80	72

TABLE IX (Continued)

No.	ITEM	GROUP I 292	GROUP II 258
58.	Administer dental and other clinics during school hours . . . . .	22	21
59.	Prepare school exhibits and transport them to the county seat . . . . .	32	43
60.	Transport pupils to various centers for contests . . . . .	46	36
61.	Know well the home life of each child in the school . . . . .	70	61
<i>Activities Involved in Personal Relations:</i>			
62.	Live in a teacherage alone . . . . .	25	14
63.	Live in a home without modern conveniences . . . . .	47	35
64.	Share room with other person . . . . .	36	25
65.	Assist with housework at boarding place . . . . .	36	40
66.	Depend on landlord or neighbors for transportation . . . . .	30	28
67.	Walk less than a mile to school . . . . .	34	43
68.	Walk one mile but less than two miles to school . . . . .	17	21
69.	Walk two miles or more to school . . . . .	14	17
70.	Ride or drive a horse to school . . . . .	18	12
71.	Drive a car to school . . . . .	15	24
72.	Become a social leader for a group of young people . . . . .	34	35
73.	Become acquainted with and visit parents . . . . .	72	85
74.	Establish friendly relations with school officials . . . . .	73	85
75.	Find or provide suitable recreation for self in community . . . . .	63	71
76.	Possess knowledge of all vocations in community sufficient to be interested in its activities . . . . .	62	53
77.	Possess sufficient skill in many activities so that one may engage in duties of homes visited . . . . .	60	50
78.	Possess ability to do housework (including laundry, cooking, sewing, etc) . . . . .	66	78
<i>Activities Involving Community Relations:</i>			
79.	Serve as source of information for individuals in the community . . . . .	47	35
80.	Initiate action looking toward enforcing legal rights of children and defectives . . . . .	29	19
81.	Assume active leadership in movement for improvement of community health . . . . .	35	33
82.	Assume active leadership in movement for improving recreational facilities in community . . . . .	31	19

TABLE IX (Continued)

No.	ITEM	GROUP I 292	GROUP II 258
83.	Assume active leadership in movement for economic improvement of community (cooperative marketing, etc.) . . . . .	18	10
84.	Assume leadership in community organizations . . . . .	28	22
85.	Plan and conduct institutes and short courses for improvement of adults . . . . .	13	3
86.	Assume leadership of social activities (parties, etc) . . . . .	30	36
87.	Serve as superintendent of Sunday School . . . . .	26	15
88.	Teach Sunday School class . . . . .	35	35
89.	Attend church and Sunday School . . . . .	69	72
90.	Sing in a church choir . . . . .	36	25
91.	Attend "Ladies' Aid" . . . . .	24	28
92.	Become a member of community clubs . . . . .	34	36
93.	Conduct entertainments for the community . . . . .	60	58
94.	Assume responsibility for behavior of audience at public meetings in the schoolhouse . . . . .	55	58
95.	Make public talks or addresses . . . . .	30	23
	<i>Activities Concerning Buildings and Grounds:</i>		
96.	Do all the janitor work . . . . .	58	62
97.	Find someone to do the janitor work . . . . .	20	19
98.	Employ a janitor . . . . .	19	16
99.	Supervise a janitor . . . . .	32	32
100.	Care for school grounds . . . . .	57	65
101.	Actively oversee school toilets . . . . .	77	85
102.	Supervise care of grounds . . . . .	77	89
103.	Oversee source of drinking water . . . . .	77	73
104.	Take full responsibility for sanitary condition of buildings and grounds . . . . .	59	63
105.	Make repairs . . . . .	20	13
106.	Supervise repairs . . . . .	32	27
107.	Regulate temperature and ventilation . . . . .	84	90
108.	Keep fire in stove or furnace . . . . .	70	76
109.	Start fires in morning . . . . .	50	62
110.	Supervise building and keeping of fires . . . . .	54	49
111.	Protect school building against tramps and other marauders . . . . .	39	46
112.	Bring drinking water to school . . . . .	21	12

that an average resulting from the two parts in this table will not always be the same, exactly, as the total of Table V.

The column headed "292" includes the best and poorest reported in Table VII and represents returns from 18 states. The column headed "258" includes returns from 8 states, two of which are also in the list represented in the other column. It is significant

that not only are there items in which the differences between the columns are large enough to have a statistical significance, but there is no pronounced trend indicating any important difference in the activities of teachers in the one-room schools represented by the sampling.

## CHAPTER IV

### RELIABILITY OF THE DATA

#### ADEQUACY OF THE SAMPLING FROM ONE-TEACHER SCHOOLS

About one-tenth of the check lists sent out, giving a somewhat larger proportion of returns, were presented to students in rural education classes in western state teachers colleges. There was no attempt at selection. The returns are an impartial sampling except in so far as the teachers from one-teacher schools who attend summer school may be superior to one-room teachers in the country as a whole.

All the returns from New York State were secured through the kindness of a member of the State Department of Education. The lists were checked at a meeting called by a supervisory officer, and no doubt represent the teachers of the state except as the data might have been influenced by the fact that the meeting was in a county where the one-teacher schools are reported to be somewhat more backward than the one-teacher schools in many parts of the state.

All other check lists were sent to teachers whose names had been secured from their county superintendents. The list of best and poorest teachers has already been explained. Three county superintendents sent a county directory and the names were taken from that in the order in which they were printed. All others were sent to teachers whose names were furnished by the superintendent in response to a request for the names of teachers who would be willing to cooperate in a study. It is likely that the best teachers, at least those who cooperate best with school authorities, were selected for those lists, but, except for that possibility, the sampling was entirely impartial.

It seems probable that although the check lists were sent to an unselected sampling, the data may represent the practices and opinions of the better half of the one-room teachers to a greater degree than it does the poorer half. There is not much evidence that this is true, although a slightly larger proportion of "bests"

replied than of "poorest." It is likely, however, that good teachers respond more readily to extra work than do poorer ones. In the process of scoring, all returns were discarded that showed misunderstanding of the purpose of the check list or gross carelessness in answering.

In the beginning of the study an attempt was made to include teachers from other strictly rural schools than the one-teacher schools. Preliminary tabulations showed some rather marked differences in activities of various groups of rural teachers, so returns included in the present report are from one-teacher rural schools only.

In three of the eight cities included in the returns from grade teachers, the check lists were sent to an administrative officer who had the blanks filled and returned them. So far as it is possible to discover, the groups were entirely unselected.

In the other five cities the blanks were mailed to individual teachers whose names had been secured from the city superintendent's office. The blanks were sent to teachers as their names appeared on an alphabetical list.

Except to the degree to which better teachers may tend to reply more freely than poorer ones, there is no reason to suppose that the returns from the city teachers do not furnish an impartial sampling. The cities themselves vary in size from 3,000 to 75,000 in population. They were selected for no other reason than that the investigator could get the names of the teachers because of acquaintance with some person in the system. So far as he knows, they represent progressive school systems in eastern, central, southern, and western states.

Returns were received from a few administrative and supervisory members of the staff, but these were eliminated in the process of tabulation. Blanks were sent to a few teachers in small school buildings in villages, but separate tabulation showed that they differed considerably in their activities both from grade teachers in larger buildings and from teachers of one-teacher schools. The returns from those teachers are not included in this study.

#### RELIABILITY OF THE PERCENTAGES

It is desirable to know the reliability of the percentages discovered for the various items in the different samplings. It seems

that the best measure we can use is the standard error, call it  $e$ ,<sup>1</sup>

which is found by the formula:  $e = \frac{p \times q}{n}$ ,

where  $p$  is the per cent who do, and  $q$  is the per cent who do not, and  $n$  is the number of cases in the sampling. There is some question as to whether or not this formula is reliable for per cents below 10 or above 90, but we have ventured to use it from 5 to 95 per cent.

Since we have used various data involving seven different samplings, it will be found desirable to find the value of  $e$  for all the possible percentages of the various values of  $n$ . This may readily be done by solving for  $e$  at percentages varying by intervals of 5 and then plotting the curve of the  $e$ 's for any value of  $n$ . Since practically all the possible error due to limitation of sampling will lie between  $\pm 3e$ , we shall show also that value.

In the case of Table V, where  $n$  is 550, we can show the varying values of  $e$  to be as follows:

If the per cent is 50, then  $e$  equals 2.13 and  $3e$  equals 6.39  
 If the per cent is 45, then  $e$  equals 2.12 and  $3e$  equals 6.36  
 If the per cent is 40, then  $e$  equals 2.09 and  $3e$  equals 6.27  
 If the per cent is 35, then  $e$  equals 2.03 and  $3e$  equals 6.09  
 If the per cent is 30, then  $e$  equals 1.96 and  $3e$  equals 5.88  
 If the per cent is 25, then  $e$  equals 1.85 and  $3e$  equals 5.55  
 If the per cent is 20, then  $e$  equals 1.70 and  $3e$  equals 5.10  
 If the per cent is 15, then  $e$  equals 1.52 and  $3e$  equals 4.56  
 If the per cent is 10, then  $e$  equals 1.27 and  $3e$  equals 3.81  
 If the per cent is 5, then  $e$  equals .93 and  $3e$  equals 2.79

and, since  $p$  and  $q$  are interchangeable factors in the equation from which the value of  $e$  is derived, it follows that exactly the same values of  $e$  would hold for the percentages from 50 to 95 as exist for the values from 50 to 5

In a similar way we may compute and graph the values of  $e$  when  $n$  equals 292, as in Table IX.

If the per cent is 50, then  $e$  equals 2.92 and  $3e$  equals 8.76  
 If the per cent is 45, then  $e$  equals 2.90 and  $3e$  equals 8.70  
 If the per cent is 40, then  $e$  equals 2.86 and  $3e$  equals 8.58  
 If the per cent is 35, then  $e$  equals 2.79 and  $3e$  equals 8.37  
 If the per cent is 30, then  $e$  equals 2.68 and  $3e$  equals 8.04  
 If the per cent is 25, then  $e$  equals 2.53 and  $3e$  equals 7.59  
 If the per cent is 20, then  $e$  equals 2.34 and  $3e$  equals 7.02

<sup>1</sup>Yule, G. Udny *An Introduction to the Theory of Statistics*, Chap. XIII. Charles Griffin and Company, London.

If the per cent is 15, then  $e$  equals 2.09 and  $3e$  equals 6.27

If the per cent is 10, then  $e$  equals 1.75 and  $3e$  equals 5.25

If the per cent is 5, then  $e$  equals 1.27 and  $3e$  equals 3.81

and similarly for values greater than 50 per cent.

It is evident that decreasing the value of  $n$  increases the value of  $e$ , and that when  $n$  is 292 the smallest reliable value is about 4 per cent instead of 3 per cent, as when  $n$  is 550. Also, the reliability of an empirical percentage is lessened when  $n$  is decreased, so that in this case an empirical value of 30 per cent might, if the sample be indefinitely increased, be found to have a true value anywhere from 22 to 38 per cent. But if  $n$  equals 258 as in Table IX, we have the following values for  $e$ :

If the per cent is 50, the value of  $e$  is 3.11 and  $3e$  is 9.33

If the per cent is 45, the value of  $e$  is 3.09 and  $3e$  is 9.27

If the per cent is 40, the value of  $e$  is 3.05 and  $3e$  is 9.15

If the per cent is 35, the value of  $e$  is 2.97 and  $3e$  is 8.91

If the per cent is 30, the value of  $e$  is 2.85 and  $3e$  is 8.55

If the per cent is 25, the value of  $e$  is 2.69 and  $3e$  is 8.07

If the per cent is 20, the value of  $e$  is 2.49 and  $3e$  is 7.47

If the per cent is 15, the value of  $e$  is 2.22 and  $3e$  is 6.66

If the per cent is 10, the value of  $e$  is 1.86 and  $3e$  is 5.58

If the per cent is 5, the value of  $e$  is 1.35 and  $3e$  is 4.05

and the same values for corresponding percentages above 50.

Also, we have the following set of values for the standard error of the percentages found for city grade teachers in Table VI, where the number of cases is 200:

If the per cent is 50, then  $e$  equals 3.53 and  $3e$  equals 10.59

If the per cent is 45, then  $e$  equals 3.51 and  $3e$  equals 10.53

If the per cent is 40, then  $e$  equals 3.46 and  $3e$  equals 10.38

If the per cent is 35, then  $e$  equals 3.37 and  $3e$  equals 10.11

If the per cent is 30, then  $e$  equals 3.24 and  $3e$  equals 9.72

If the per cent is 25, then  $e$  equals 3.06 and  $3e$  equals 9.18

If the per cent is 20, then  $e$  equals 2.82 and  $3e$  equals 8.46

If the per cent is 15, then  $e$  equals 2.52 and  $3e$  equals 7.56

If the per cent is 10, then  $e$  equals 2.12 and  $3e$  equals 6.36

If the per cent is 5, then  $e$  equals 1.54 and  $3e$  equals 4.62

and like values for percentages above 50

It will readily be seen that percentage values of less than 5 might probably disappear if the sampling were indefinitely increased. Since they are of doubtful significance, we have written such values as zero.

When the number of cases is 94, as in Table VII, we have the following set of values for the standard error:

If the per cent is 50, the value of $e$ is 5.15 and $3e$ is 15.45
If the per cent is 45, the value of $e$ is 5.13 and $3e$ is 15.39
If the per cent is 40, the value of $e$ is 5.05 and $3e$ is 15.15
If the per cent is 35, the value of $e$ is 4.92 and $3e$ is 14.76
If the per cent is 30, the value of $e$ is 4.72 and $3e$ is 14.16
If the per cent is 25, the value of $e$ is 4.46 and $3e$ is 13.38
If the per cent is 20, the value of $e$ is 4.12 and $3e$ is 12.36
If the per cent is 15, the value of $e$ is 3.68 and $3e$ is 11.04
If the per cent is 10, the value of $e$ is 3.09 and $3e$ is 9.27
If the per cent is 5, the value of $e$ is 2.24 and $3e$ is 6.72

and corresponding values of  $e$  for percentages above 50.

And similarly when the number of cases is 84, as in Table VII, we have the following values of  $e$ :

If the per cent is 50, then the value of $e$ is 5.45 and $3e$ is 16.35
If the per cent is 45, then the value of $e$ is 5.42 and $3e$ is 16.26
If the per cent is 40, then the value of $e$ is 5.34 and $3e$ is 16.02
If the per cent is 35, then the value of $e$ is 5.20 and $3e$ is 15.60
If the per cent is 30, then the value of $e$ is 5.00 and $3e$ is 15.00
If the per cent is 25, then the value of $e$ is 4.72 and $3e$ is 14.16
If the per cent is 20, then the value of $e$ is 4.36 and $3e$ is 13.08
If the per cent is 15, then the value of $e$ is 3.88 and $3e$ is 11.64
If the per cent is 10, then the value of $e$ is 3.27 and $3e$ is 9.81
If the per cent is 5, then the value of $e$ is 2.38 and $3e$ is 7.14

and corresponding values for values above 50 per cent.

And if the number of cases is 40, we have the following set of values for the standard error:

If the per cent is 50, then the value of $e$ is 7.89 and $3e$ is 23.67
If the per cent is 45, then the value of $e$ is 7.86 and $3e$ is 23.58
If the per cent is 40, then the value of $e$ is 7.74 and $3e$ is 23.22
If the per cent is 35, then the value of $e$ is 7.54 and $3e$ is 22.62
If the per cent is 30, then the value of $e$ is 7.24 and $3e$ is 21.72
If the per cent is 25, then the value of $e$ is 6.84 and $3e$ is 20.52
If the per cent is 20, then the value of $e$ is 6.32 and $3e$ is 18.96
If the per cent is 15, then the value of $e$ is 5.64 and $3e$ is 16.92
If the per cent is 10, then the value of $e$ is 4.74 and $3e$ is 14.22
If the per cent is 5, then the value of $e$ is 3.44 and $3e$ is 10.32

and the same values for corresponding per cents above 50.

Inspection of the above computations indicates that where the number of cases in the sampling is 80, or more, the reliability of any per cent greater than 7 is fairly certain, and that for our purpose in determining the difference in the activities and responsibilities of groups of teachers the data are sufficiently extensive. On the other hand, when the number of cases in a sampling is as small as 40, it is evident that percentage values as low as 15 have

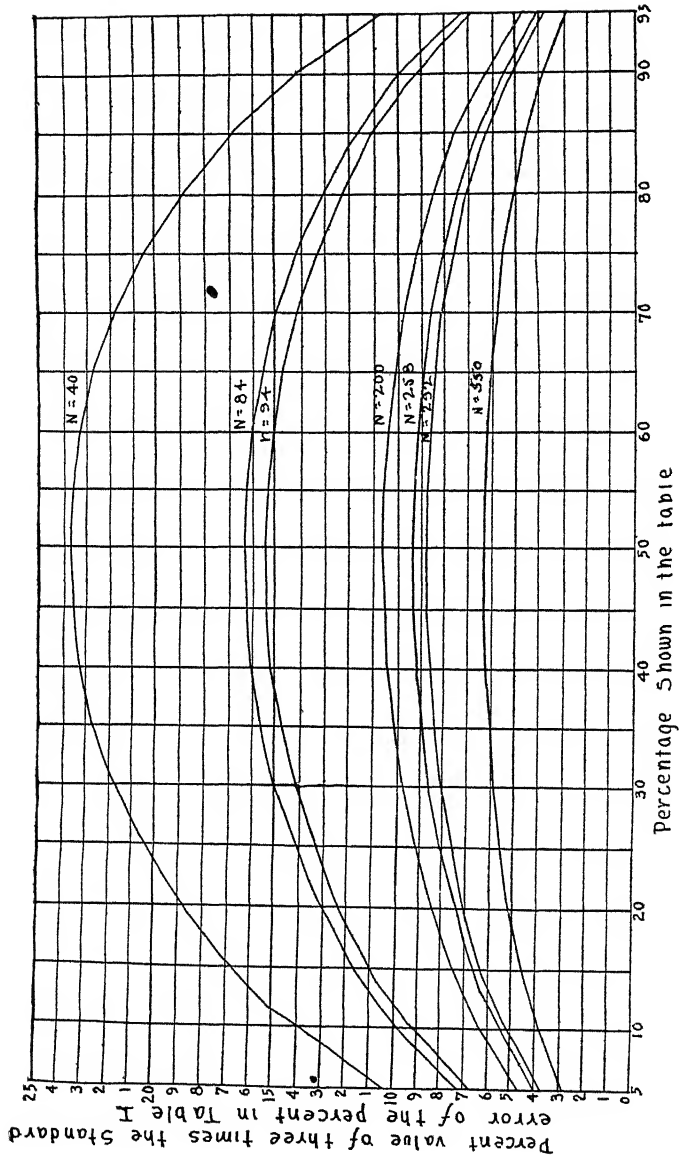


FIGURE 1

SHOWING THREE TIMES THE STANDARD ERROR DEVIATION OF PERCENTAGES IN TABLES V, VI, VII, VIII, AND IX

small reliability and that about all we can say of a determined value of 20 per cent is that a true value almost certainly lies somewhere between 0 and 40 per cent. Such wide deviation renders the percentage values in Table VIII of small weight except as indications of tendencies and as bases for comparison with other similar samplings.

All the values for the standard error  $e$  for any per cent value for each of the seven values of  $n$  may be found by reading Figure 1. The graph is read by finding on the base line the per cent for which it is desired to find the standard error, and reading up that line to the point which intersects the curve for the number of cases in the sampling from which the per cent was computed, and then reading to the left margin to find the value of  $e$ .

#### RELIABILITY OF DIFFERENCES IN PER CENTS

On the preceding pages we have set up a measure for determining the reliability of the percentage values determined by the data collected, in terms of standard errors of per cents. It is now desirable to set up a measure for the differences in per cent shown when comparing values arising in samplings of different size and from different universes. The best measure is the standard error of the difference of the percentages determined. The formula from Yule gives the standard error of the difference:

$$E = \sqrt{e_1^2 + e_2^2}$$

If we wish to determine the reliability of the differences apparent in the per cents shown between the activities of the 550 teachers in one-room schools, and the 200 grade teachers in city schools, as given in Table VI, we may do so by means of the standard error of the difference.

Since when the per cent is 50 the standard error  $e$  is the largest possible, if we let  $p_1$  be 50 and  $n_1$  be 550, then we have the following set of values for the standard error of the difference,  $E$ , for the varying percentage values of  $p_2$  when  $n_2$  is 200:

If $p_2$ is 50, then the value of $E$ is	4.12 and $3E$ is	12.36
If $p_2$ is 45, then the value of $E$ is	4.11 and $3E$ is	12.33
If $p_2$ is 40, then the value of $E$ is	4.06 and $3E$ is	12.18
If $p_2$ is 35, then the value of $E$ is	3.99 and $3E$ is	11.97
If $p_2$ is 30, then the value of $E$ is	3.87 and $3E$ is	11.61
If $p_2$ is 25, then the value of $E$ is	3.73 and $3E$ is	11.19
If $p_2$ is 20, then the value of $E$ is	3.54 and $3E$ is	10.62

If  $p_2$  is 15, then the value of  $E$  is 3.30 and  $3E$  is 9.90  
 If  $p_2$  is 10, then the value of  $E$  is 3.00 and  $3E$  is 9.00  
 If  $p_2$  is 5, then the value of  $E$  is 2.63 and  $3E$  is 7.89

and a corresponding set of values of the standard error of the difference for values of  $p_2$  above 50 per cent.

That is, if we take the standard error for the per cent values determined in the sampling of 550 teachers of one-room schools, at the largest possible value, and then if we take any value of per cent derived from the sampling of 200 grade teachers in cities, say 40 per cent, the computation above shows that the chances are two to one that a difference of 4 per cent in the other column is a real difference and not one due to inadequacy of sampling. Also, if  $p_2$  remains 40 per cent, any per cent in the column of values derived from the 550 cases in Table VI which is as much as 12 per cent more or less than 40 is a statistically reliable difference, and would not disappear no matter how extensive the sampling.

But it may be noted that not all values in the sampling of the 550 cases have a percentage which approximates 50, and so in many cases the standard error would be less than the above values. Let us then take  $p_1$  at its lowest value, say 5 per cent, and compute the standard error of the difference,  $E$ , for all the possible values of  $p_2$ . We then have the following:

If  $p_2$  is 50 per cent, the value of  $E$  is 3.65 and  $3E$  is 10.95  
 If  $p_2$  is 45 per cent, the value of  $E$  is 3.63 and  $3E$  is 10.89  
 If  $p_2$  is 40 per cent, the value of  $E$  is 3.58 and  $3E$  is 10.74  
 If  $p_2$  is 35 per cent, the value of  $E$  is 3.49 and  $3E$  is 10.47  
 If  $p_2$  is 30 per cent, the value of  $E$  is 3.37 and  $3E$  is 10.11  
 If  $p_2$  is 25 per cent, the value of  $E$  is 3.19 and  $3E$  is 9.57  
 If  $p_2$  is 20 per cent, the value of  $E$  is 2.97 and  $3E$  is 8.91  
 If  $p_2$  is 15 per cent, the value of  $E$  is 2.69 and  $3E$  is 8.07  
 If  $p_2$  is 10 per cent, the value of  $E$  is 2.32 and  $3E$  is 6.96  
 If  $p_2$  is 5 per cent, the value of  $E$  is 1.79 and  $3E$  is 5.37

and a corresponding set of values for per cents above 50

It is evident, therefore, that any difference in the corresponding columns in Table VI which is greater than 12.36 per cent is a "reliable" difference, due to a real difference in the two types of teaching activities, and that it is unlikely that any extension of the sampling would cause it to disappear. And, likewise, any difference less than 5.37 per cent is not reliable and would in all probability disappear if the sampling were to be extended. Differences lying between 12.36 and 5.37 per cent are of doubtful significance.

and recourse must be had to special computation or to a graph, in order to determine positively their value as a measure of difference in the duties of the teachers.

Figure 2 makes it possible to tell at a glance whether or not the difference between any set of values in Table VI is a significant one. The graph is read by finding on the base line the value of the per cent  $p_2$ , where  $n$  is 200, and reading up that line until it intersects the upper line of the shaded area, and then reading to the left margin where the smallest significant difference is the value on the vertical axis. If the observed difference is greater than the value read from the graph, the statistical difference of the nature of the two types of positions for that particular item is established. In case the observed difference is less than the value read from the graph, then the two types of position are probably not essentially different in so far as the particular item measured is concerned. In case the observed difference falls within the partly shaded area of the graph, the computation must be made for the particular values of the per cents and number of cases involved in the comparison.

An examination of Table VI shows that for column 1 the difference in percentages of rural teachers and of city teachers who say that they do perform the 112 items is greater in every case than the largest possible value of three times the standard error of the difference. It follows, then, that so far as the items on our check list are concerned, the activities and duties of the teacher in a one-teacher school are different from those of a grade teacher in a city school.

So far as column 3 of the same table is concerned the per cents are much smaller, and the answer is a matter of opinion; but except for a few cases and those mostly where the number answering is very small, the differences observed are in excess of three times the standard error of the difference, and we are justified in assuming that not only are the activities different, but the attitude of the teachers toward the items of our check list is distinctly different in the two groups of teachers measured.

In the same way we may compute and graph the smallest reliable differences between percentages of best and poorest teachers for the items of Table VII. In this case we shall let  $n_1$  be the 94 best teachers, and  $n_2$  be the 84 poorest teachers. If we take the largest possible value of the standard error,  $e_1$ , and compute the

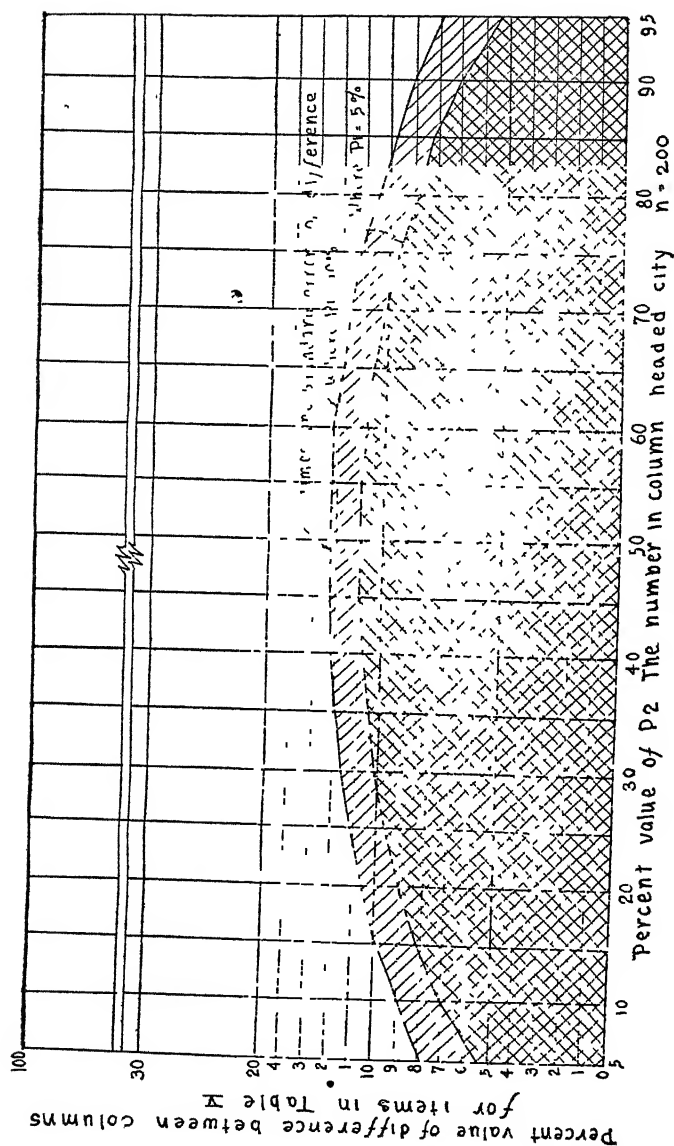


FIGURE 2

SHOWING THE RELIABILITY OF THE DIFFERENCES BETWEEN PER CENT VALUES OF ITEMS IN TABLE VI, WHERE  $N_1 = 550$  AND  $N_2 = 200$

standard error of the difference,  $E$ , for the varying values of  $e_2$ , we have.

If $p_2$ is 50, the value of $E$ is 7.51 and $3E$ is 22.53
If $p_2$ is 45, the value of $E$ is 7.48 and $3E$ is 22.44
If $p_2$ is 40, the value of $E$ is 7.42 and $3E$ is 22.26
If $p_2$ is 35, the value of $E$ is 7.33 and $3E$ is 21.99
If $p_2$ is 30, the value of $E$ is 7.18 and $3E$ is 21.54
If $p_2$ is 25, the value of $E$ is 6.99 and $3E$ is 20.97
If $p_2$ is 20, the value of $E$ is 6.75 and $3E$ is 20.25
If $p_2$ is 15, the value of $E$ is 6.46 and $3E$ is 19.38
If $p_2$ is 10, the value of $E$ is 6.10 and $3E$ is 18.30
If $p_2$ is 5, the value of $E$ is 5.68 and $3E$ is 17.04

and the same set of values for percentages above 50.

It is evident that values in the column headed "Best" which approximate 50 per cent values in the column headed "Poorest" must vary by at least 20 per cent before the difference is of positive reliability. It seems, however, that although not certain, where one set of values for  $p$  exceeds in a large number of cases the other value for  $p$  by more than one  $E$ , the difference is significant. This will be considered in the next chapter when the interpretation of the data is discussed.

Since not all the values of  $p_1$ , in Table VII, are near 50, it seems desirable to have a measure for the reliability of differences involving those values. If, therefore, we take the smallest possible value for  $e_1$ , that is, when  $p_1$  is 5 per cent, we have the following values for  $E$ :

If $p_2$ is 50, the value of $E$ is 5.90 and $3E$ is 17.70
If $p_2$ is 45, the value of $E$ is 5.87 and $3E$ is 17.61
If $p_2$ is 40, the value of $E$ is 5.79 and $3E$ is 17.37
If $p_2$ is 35, the value of $E$ is 5.66 and $3E$ is 16.98
If $p_2$ is 30, the value of $E$ is 5.48 and $3E$ is 16.44
If $p_2$ is 25, the value of $E$ is 5.23 and $3E$ is 15.69
If $p_2$ is 20, the value of $E$ is 4.91 and $3E$ is 14.73
If $p_2$ is 15, the value of $E$ is 4.49 and $3E$ is 13.47
If $p_2$ is 10, the value of $E$ is 3.97 and $3E$ is 11.91
If $p_2$ is 5, the value of $E$ is 3.27 and $3E$ is 9.81

and the same set of values for corresponding per cents above 50.

It will be seen at once that for even the smallest values of  $p_1$  and  $p_2$  a difference of 10 is the least which has a certain significance and, that where either of the values of  $p$  is 20 or more, a difference of 15 is the smallest that we may be sure would not disappear were the sampling made larger.

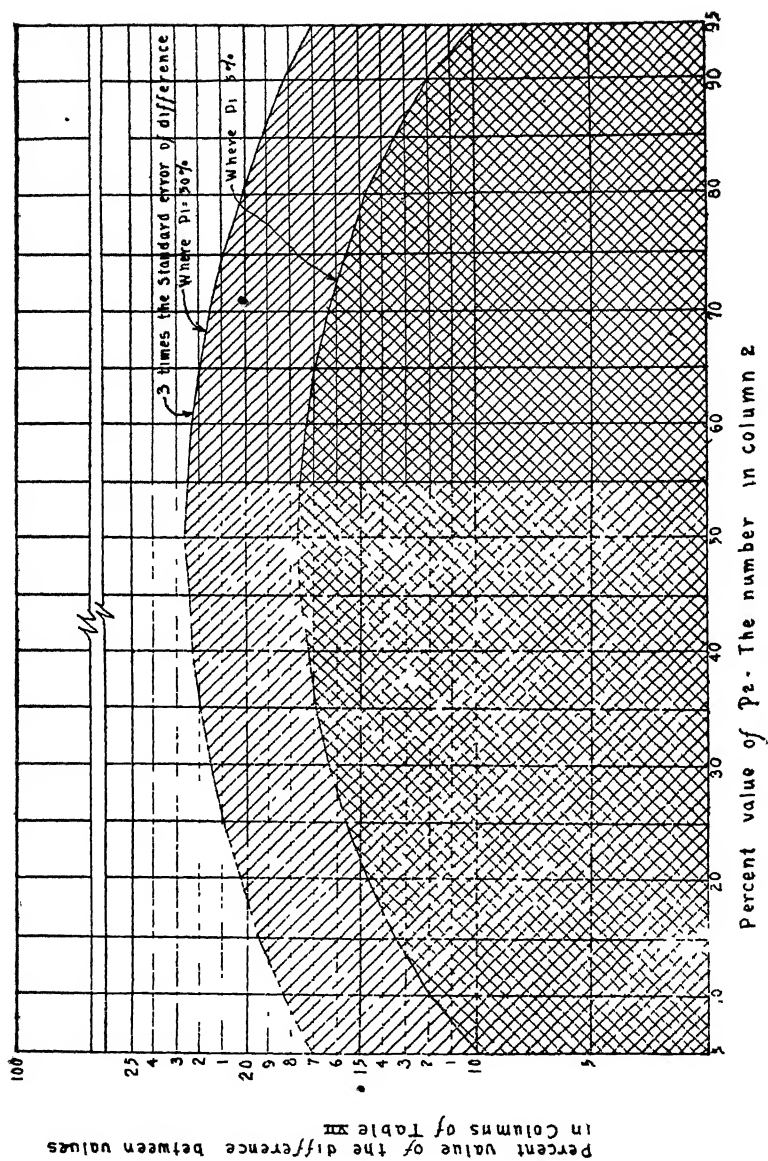


FIGURE 3

SHOWING RELIABILITY OF DIFFERENCES BETWEEN VALUES IN COLUMNS 1 AND 2, TABLE VII

The graph for those values listed above (Figure 3) is read in the same manner as Figure 2. To determine the reliability of any observed difference, find the value of  $p_1$  on the vertical axis and read in, find the value of  $p_2$  on the base and read up. If the values meet within the heavily shaded area, the difference is not significant; but if they meet entirely outside the shaded area we may assume that the difference is real and would not be eliminated by any additional sampling. If the lines of the values meet in the partly shaded area, the significance is doubtful and can be determined only by actual computation.

We may measure in the same way the reliability of the observed differences in Table VIII. In this case we are comparing the percentages of five samplings for each item, but since the number of cases is the same in each sample we may simply let  $p_1$  be the larger per cent and  $p_2$  be the smaller per cent. If we take the largest possible value for  $e_1$  we have the following set of values for  $E$ :

If  $p_2$  is 50, the value of  $E$  is 11.18 and  $3E$  is 33.54  
 If  $p_2$  is 45, the value of  $E$  is 11.15 and  $3E$  is 33.45  
 If  $p_2$  is 40, the value of  $E$  is 11.06 and  $3E$  is 33.18  
 If  $p_2$  is 35, the value of  $E$  is 10.92 and  $3E$  is 32.76  
 If  $p_2$  is 30, the value of  $E$  is 10.72 and  $3E$  is 32.16  
 If  $p_2$  is 25, the value of  $E$  is 10.46 and  $3E$  is 31.38  
 If  $p_2$  is 20, the value of  $E$  is 10.12 and  $3E$  is 30.36  
 If  $p_2$  is 15, the value of  $E$  is 9.71 and  $3E$  is 29.13  
 If  $p_2$  is 10, the value of  $E$  is 9.22 and  $3E$  is 27.66  
 If  $p_2$  is 5, the value of  $E$  is 8.63 and  $3E$  is 25.89

and the same set of values for corresponding values above 50 per cent.

It is evident that so long as  $p_1$  approximates 50,  $p_2$  must be less than 20, or more than 80, before a reliable difference is established. But it is desired to know the smallest reliable difference when  $p_1$  varies greatly from 50. In this case (since that is the smallest significant value), we shall use 10 per cent as giving the lowest possible value for  $e_1$ . We have, then, the following set of values for  $E$ .

If  $p_2$  is 50, the value of  $E$  is 9.22 and  $3E$  is 27.66  
 If  $p_2$  is 45, the value of  $E$  is 9.18 and  $3E$  is 27.54  
 If  $p_2$  is 40, the value of  $E$  is 9.08 and  $3E$  is 27.24  
 If  $p_2$  is 35, the value of  $E$  is 8.91 and  $3E$  is 26.73  
 If  $p_2$  is 30, the value of  $E$  is 8.66 and  $3E$  is 25.98  
 If  $p_2$  is 25, the value of  $E$  is 8.33 and  $3E$  is 24.99

If  $p_2$  is 20, the value of  $E$  is 7.90 and  $3E$  is 23.70  
 If  $p_2$  is 15, the value of  $E$  is 7.37 and  $3E$  is 22.11  
 If  $p_2$  is 10, the value of  $E$  is 6.71 and  $3E$  is 20.23  
 If  $p_2$  is 5, the value of  $E$  is 5.86 and  $3E$  is 17.58

and the same set of values for corresponding per cents above 50.

We see that even when the value of  $e_1$  is the least possible when the number of cases is 40, a difference of less than 20 is not reliable, and differences of less than 10 have slight significance.

Figure 4 is to be read in exactly the same way as Figure 2

Table IX was devised primarily to determine the reliability of the sampling of the teachers of one-teacher schools. It is in effect a measure of one half against the other. In this case  $n_1$  is 292 and  $n_2$  is 258. If we take the largest possible value of  $e_1$ , we have the following set of values for  $E$ .

If  $p_2$  is 50, the value of  $E$  is 4.27 and  $3E$  is 12.81  
 If  $p_2$  is 45, the value of  $E$  is 4.25 and  $3E$  is 12.75  
 If  $p_2$  is 40, the value of  $E$  is 4.22 and  $3E$  is 12.66  
 If  $p_2$  is 35, the value of  $E$  is 4.16 and  $3E$  is 12.48  
 If  $p_2$  is 30, the value of  $E$  is 4.08 and  $3E$  is 12.24  
 If  $p_2$  is 25, the value of  $E$  is 3.98 and  $3E$  is 11.94  
 If  $p_2$  is 20, the value of  $E$  is 3.84 and  $3E$  is 11.52  
 If  $p_2$  is 15, the value of  $E$  is 3.67 and  $3E$  is 11.01  
 If  $p_2$  is 10, the value of  $E$  is 3.47 and  $3E$  is 10.41  
 If  $p_2$  is 5, the value of  $E$  is 3.22 and  $3E$  is 9.66

and the same set of values for corresponding per cents above 50

It is evident that when the value of  $p_1$  is near 50, the smallest reliable difference is greater than 12. An examination of the table shows that only two items, numbers 33 and 41, differ by an amount greater than 12.

But let us take the smallest possible value for  $e_1$ , that is, when  $p_1$  is 5 per cent. We now have the following set of values for  $E$ :

If  $p_2$  is 50, the value of  $E$  is 3.36 and  $3E$  is 10.08  
 If  $p_2$  is 45, the value of  $E$  is 3.34 and  $3E$  is 10.02  
 If  $p_2$  is 40, the value of  $E$  is 3.30 and  $3E$  is 9.90  
 If  $p_2$  is 35, the value of  $E$  is 3.22 and  $3E$  is 9.66  
 If  $p_2$  is 30, the value of  $E$  is 3.12 and  $3E$  is 9.36  
 If  $p_2$  is 25, the value of  $E$  is 2.98 and  $3E$  is 8.94  
 If  $p_2$  is 20, the value of  $E$  is 2.80 and  $3E$  is 8.40  
 If  $p_2$  is 15, the value of  $E$  is 2.56 and  $3E$  is 7.68  
 If  $p_2$  is 10, the value of  $E$  is 2.26 and  $3E$  is 6.78  
 If  $p_2$  is 5, the value of  $E$  is 1.86 and  $3E$  is 5.58

and the same set of values for corresponding per cents above 50.

It is evident that even with the smallest possible value for  $e_1$

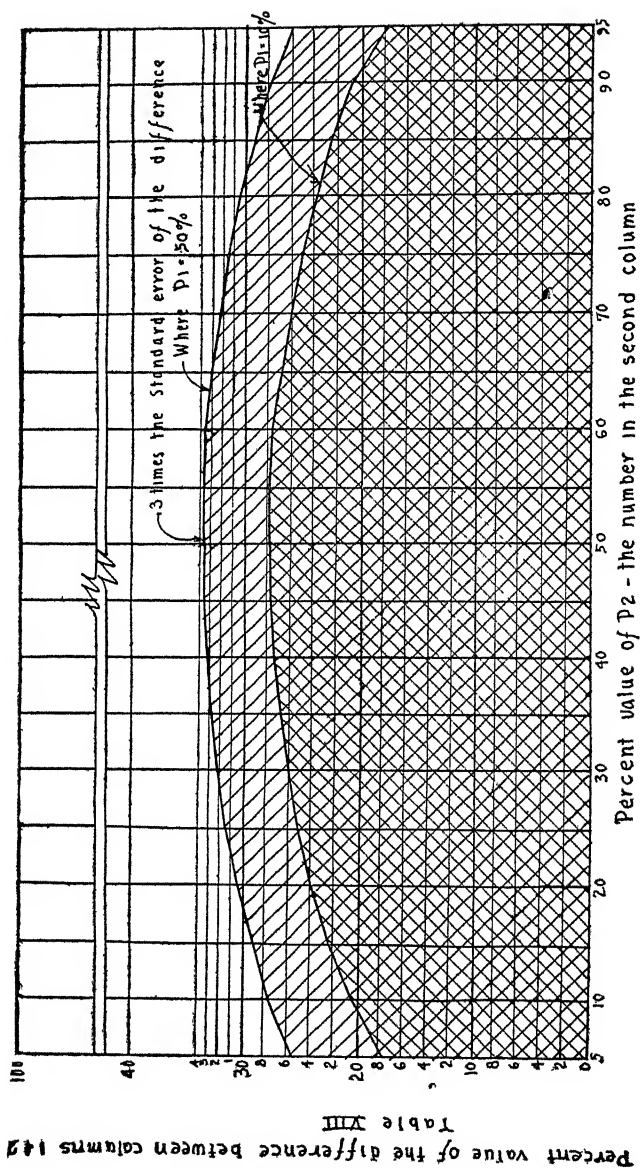
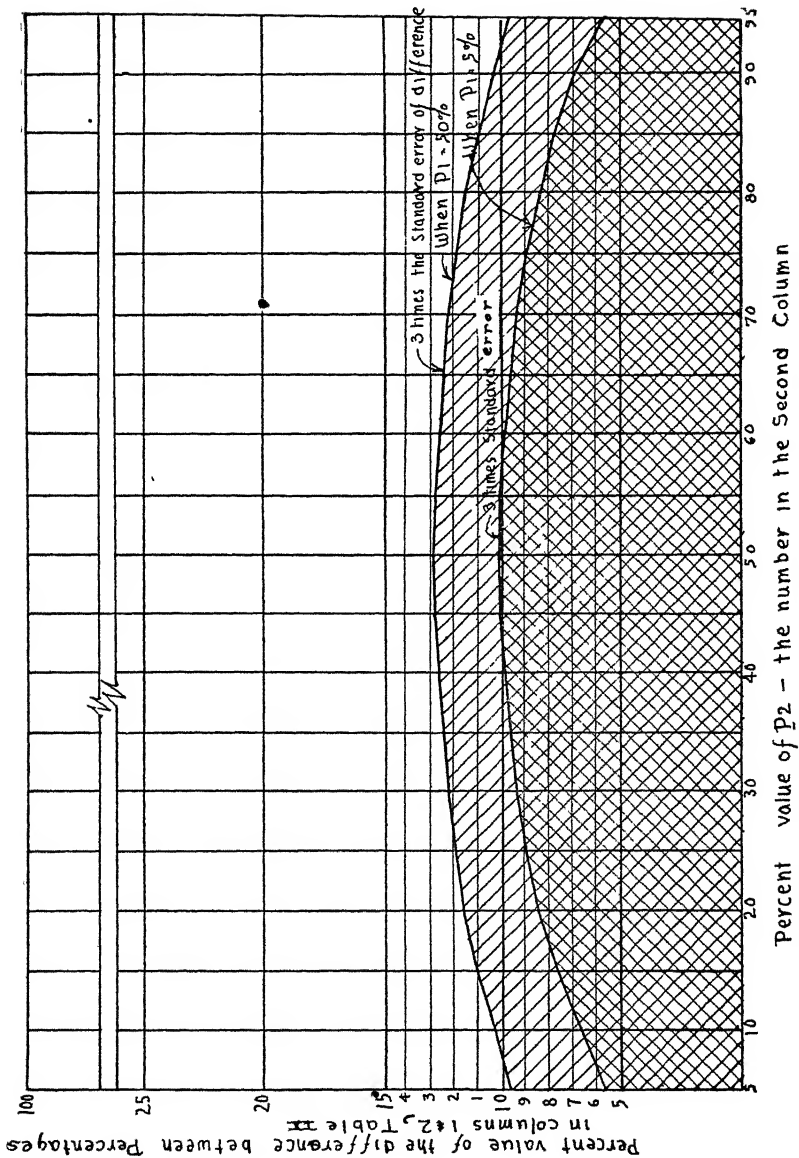


FIGURE 4

# Reliability of the Data



only for very low values of  $p_2$  would an observed difference of less than 10 be significant as an evidence of insufficient sampling. No such difference appears in the table. For the 112 items on the check list, the returns seem to have a high degree of reliability except the two mentioned above—item 33, Teach agriculture, and item 41, Coach athletic teams. It is possible that differences in current practice in various sections of the country account for the failure to establish the complete reliability of the sampling.

Figure 5 is to be read in exactly the same way as Figure 2

#### SUMMARY

The sampling seems to be large enough, and sufficiently representative to measure adequately the practices among grade teachers in cities and among teachers of one-room schools. No other teachers are included in this study.

The data represent a fair sampling of current practice except in so far as there may be a tendency toward best practice rather than toward poorer practice.

Measures have been set up for deviations of percentages and for reliability of differences in per cents. Tables of computations and graphs have been furnished to facilitate the determination of the reliability of any difference of per cent in the tables of the preceding chapter.

A comparison of the activities of one-teacher schools with those of grade teachers shows that on every one of the 112 items on the check list there is a difference greater than three times the standard error of the difference, thus establishing the fact that the types of teaching position are essentially different in their requirements.

There are certain significant differences in activity and in attitudes of "best" and "poorest" teachers. There are few significant differences in the activities of teachers in the one-room schools of five widely separate states, and those differences which do appear are much smaller than those which appear between the "best" and "poorest" teachers of the same county.

The data concerning the activities of teachers in one-room schools have a high degree of reliability when measured by comparing one half of the returns with the other half as a criterion.

## CHAPTER V

### INTERPRETATION OF THE DATA

The most important questions for consideration in this study are: (1) Do the activities, duties, and responsibilities of teachers in the one-room schools differ in any important respects from those of grade teachers in town and city? (2) If there are such differences, what are they? (3) What is the significance of those differences in the problem of training teachers for the one-teacher school? In the preceding chapters we have attempted to show how the problem was attacked, have presented the significant data, and have set up measures of reliability in evaluating the worth of the data. It is the purpose of this chapter to interpret the data as a means of answering the questions raised.

#### REASONS FOR SUPERIORITY AND INFERIORITY OF TEACHERS IN ONE-TEACHER SCHOOLS

The number of county superintendents who furnished reasons for superiority and inferiority is too small to give the highest degree of reliability to the data. The tabulation, however, showed considerable evidence that we were approaching the saturation point so far as obtaining additional reasons was concerned, and it is likely that additional samplings would not greatly change the results of Tables III and IV. Therefore, although these data may not be entirely conclusive, they are significant.

An examination of Table III, "Reasons for superiority of 10 best teachers in one-teacher schools as listed by 16 county superintendents," shows 15 of the 30 reasons listed as having some significance in answering our major questions. Item 1, "Has had special training for rural teaching," is mentioned by 15 of the 16 superintendents and is applied to 98 of the 156 teachers rated as superior. Of course it would be interesting to know just what elements of this special training have made them superior teachers, but the fact that this item is at the head of the list indicates that superintendents believe that there is need for special training and

in many cases this training results in superior teachers for the one-teacher school. Item 4, "Cooperates well with patrons," indicates the importance of a series of facts and attitudes decidedly different in the rural community from those necessary for successful cooperation in town. Item 5, "Excellent methods of teaching," involves (if we may rely upon the data of Table V) very real differences in the jobs due to difference in organization and environment of the two types of schools

"Is a community leader," item 7, certainly involves traits and activities not expected of the grade teacher; yet it is given as a reason for the superiority of a third of the one-room teachers rated as superior. Item 8, "Is well trained," may mean essentially the same thing as item 1, or it may, and probably does, mean superiority in knowledge of subject matter. If the latter is the case, it probably means that the less effective teachers are not well prepared in subject matter for all grades. The teacher who has been prepared to teach just three grades and then finds herself in a one-teacher school where she must teach eight grades, is likely to be lacking somewhere. "Is earnest and enthusiastic," item 9, is a desirable trait for all teachers, but to be enthusiastic under the conditions usually attached to the one-teacher school requires certain attitudes not demanded of the city teacher.

Item 12, "Plans daily work," and item 24, "Makes good assignments," may at first thought seem to be tasks common to all teachers. The fact that these items appear prominently in this list of reasons for superiority of the one-room teacher is itself an indication that they are not usually well done in the one-teacher schools. The difficulties and factors involved in planning and assigning work for eight grades, instead of assigning work to but one grade, point clearly to the need for a difference in training for the two types of teaching positions.

Much the same things may be said about item 10, "Cooperates with school officials," item 16, "Has a good professional attitude," and item 17, "Is tactful." The fact that the teacher of a one-room school usually deals directly with a school board and a public rather than through a series of supervisory and administrative officers makes the problem of tact and behavior in the rural community essentially different from that required of the grade teacher. The relation of the one-teacher school to the superintendent and supervisory office is often quite remote. It follows

that a code of ethics suitable for the grade teacher, if adhered to by the teacher of the one-room school, might in itself mean failure for the latter

The first section of Table VI shows that most teachers in the one-teacher schools actually do perform a number of functions that are never performed by the grade teacher in the city but are carried on by administrative officers. It is natural, then, that "Has executive ability," item 20 of Table III, should be given as one important reason for success of the rural teacher. The teacher of the one-room school must in many cases be her own administrator. In fact, certain returns from elementary school principals to our check list, which are not presented in this study, indicate that the one-teacher school often demands the exercise of more specific administrative functions than are demanded of an elementary school principal. To expect a girl with no training in school law and school organization to succeed in the one-teacher school is beyond reason.

Item 21 of Table III, "Is a good disciplinarian," is complicated in the one-teacher school by the fact that means suitable for obtaining discipline in a room containing a single grade will hardly do in a room containing all grades and ages from 5 to 18 years. Much the same problem arises with reference to item 23, "Conducts extra-curricula activities." The task of the one-teacher school is made more difficult by the fact that there are no special teachers to share with the room teacher the burden of special subjects and coaching teams. Success in the one-teacher school demands ability to do fairly well what several specialists do for the grade teacher.

Item 25, "Especially trained for primary work," emphasizes another important difference between the job of the grade school and the one-teacher school. Almost every one-teacher school has a class of beginners. Several studies<sup>1</sup> showing that a large percentage of beginners of the one-room school require three years to complete the first two grades, merely emphasize the fact that

<sup>1</sup> U S Bureau of Education, *Bulletin No 41, 1919*, "An Educational Study of Alabama"

*Survey and Report of Virginia Public Schools Committee, 1919* Everett Wadly and Company, Richmond, Va

Works, G A *Rural School Survey of New York State, 1922*

Ogle, F. A "Rural School Problems Encountered in the Four Types of Schools in Weld County, Colorado" Unpublished M A Thesis Colorado State Teachers College, Greeley, 1928

all teachers in training for the one-teacher school should have some practice in teaching beginners.

Item 18, "Utilizes rural environment," means that in order to succeed in the one-teacher school the teacher must know much of the details of country life. It may be argued that she can learn these while on the job. The same argument might as well be used to justify no training for any other thing. The fact is that the teacher who does not know the rural environment rarely stays in the one-teacher school long enough to learn it.

#### REASONS FOR INFERIORITY OF TEACHERS IN THE ONE-TEACHER SCHOOL

As one would suppose, the reasons for inferiority of teachers in the one-teacher schools are mostly lack of those things which were given as reasons for superiority. Of the 28 reasons for inferiority in Table IV, at least half can probably be shown to be due to lack of training for certain activities that are not needed by most grade teachers.

Item 2, "Is not trained for the rural job," item 4, "Does not understand the rural situation," item 10, "Does not coöperate with patrons," item 18, "Is not a social success," item 21, "Is a city girl in the country," and item 22, "Was trained for a city job," taken together comprise the reasons given for the inferiority of over two-thirds of all the teachers rated "inferior." Evidently county superintendents believe that the one-teacher school demands a teacher fitted by training and experience for the particular duties involved.

The question of lack of knowledge of subject matter, item 1, was explained in several letters by the statement that although the teacher was a normal school graduate she was not prepared for upper grade work. It seems that the one-teacher school demands more subject matter knowledge than does the grade school.

Item 3, "Poor personality," item 7, "Is a poor disciplinarian," item 8, "Has no executive ability," item 12, "Does not cooperate with school authorities," item 13, "Uses poor methods of teaching," and item 17, "Lacks enthusiasm," have been discussed in the preceding paragraphs. So far as our data go, those who were failing because of these lacks had had as much general training as those who were succeeding because they possessed the positive characteristics. But there is considerable evidence that the training

was of a different sort. College and university training on the basis of our data seems to be closely related to failure in the one-teacher school. Our data on this point are not sufficiently large to warrant presentation or positive conclusions.

Item 5, "Lazy," item 11, "Has divided interests," and item 14, "Will not assume responsibility," were coupled in almost every case with statements indicating lack of familiarity with the rural situation. In view of that fact and of the tendencies shown by Table VI to exist among grade teachers, one may be justified in supposing that what passes for laziness and indifference is often the result of ignorance as to what ought to be done or to the supposition that someone else should do it.

According to our reports from county superintendents, teachers in the rural one-teacher schools are failing most often because they lack certain knowledge, skills, and attitudes which can be, and are, supplied by proper training—but which are not demanded of grade teachers in the city.

#### DIFFERENCES IN ACTIVITIES AND ATTITUDES OF "BEST" AND "POOREST" TEACHERS

The replies to the check list made by "Best" and "Poorest" teachers, as shown by Table VII, indicate marked differences in the activities and even more pronounced differences in the attitudes of the two groups. In reply to the question, "Do you do it," Column 1, we find on 14 items that the number of "Bests" who perform the activity exceeds the number of "Poorests" by an amount greater than three times the standard error of the difference. The "Poorests" do not exceed the "Bests" by that amount in a single case. More significant, perhaps, is the pronounced trend as to the greater activity of the best teachers indicated by the fact that on 72 of the 112 items of the check list the "Bests" exceed the "Poorests," and that on three-fourths of all the activities indicated by the list the "Bests" equal or exceed the "Poorests."

Of the 13 items in the list mentioned above as showing a statistically reliable difference in favor of the "Bests," 12 have a significance for teacher training. Of these 12, Table VI shows that eight are performed by none of the grade teachers in the city. On 5 of the 12 the per cent of "Poorests" who undertake the activity is nearer that of grade teachers than it is to that of the best one-room teachers.

A comparison of the activities measured by Table VII shows that the per cent of "Bests" who undertake an activity exceeds the per cent of "Poorests" on 16 of the 22 items "Often performed by administrator or supervisor." The "Bests" exceed the "Poorests" on 11 of the 17 items "Involved in instruction of classes," and on 16 of the 22 items called "School activities but not teaching of classes." The per cent of "Bests" exceeds that of the "Poorests" in 14 of the 17 activities involving community relations. The per cent of "Poorests" exceeds that of the "Bests" in but one group of activities—that "Concerning buildings and grounds." And here the margin is small and consists of activities which, probably, the teacher ought not be called upon to undertake.

It seems that the "best" teachers are superior because they are able to do better than the average a number of things ordinarily considered as the business of administration, because they are able successfully to adjust their methods of instruction to the demands of the one-teacher school, because they are able and willing to do many things for the school children which are not part of instruction of classes, and because they exercise a high degree of capacity for community leadership.

Striking differences are found between "Best" and "Poorest" teachers when we examine columns 2 and 3 of Table VII. Here we find an expression of opinion as to whether or not the teacher thinks she ought to undertake an activity if she does not already perform it, or whether she thinks someone else should do it. Column 2 shows that on 81 of the 112 items there is a larger per cent of "Poorests" who do not undertake the activities indicated than there is of "Bests." On 13 of those items the difference is greater than three times the standard error of the difference. It seems a fair assumption that if a teacher thinks she should undertake an activity but does not do so, it is usually because she does not know how.

Column 3 is a reply to the question whether or not the teacher thinks someone else should perform the activities indicated. In this column we find that the "Poorests" exceed the "Bests" on 101 of the 112 items, and on 45 of those the difference is more than three times the standard error of the difference. Apparently one reason why the "Poorest" teachers are rated as inferior by their superintendents is because they do not think they ought to do many of the things necessary for success in the one-teacher

school. It seems probable from our data that certain attitudes such as dependence on supervision in details and unwillingness to assume responsibilities which tend to make a person inferior in the one-teacher school would be to her advantage as a teacher in a grade school. Evidently, the establishment of a set of attitudes in harmony with the job is an important part of the training of the teacher for the one-teacher school.

A peculiar situation appears when we examine Columns 4 and 5 of Table VII. In Column 4, dealing with the importance of the activities, we find a larger per cent of "Poorests" than of "Bests" on 95 of the 112 items, while in Column 5, dealing with the difficulty of the activities, we find on 74 of the 112 items more "Bests" than "Poorests." Possibly a teacher considers an activity important when she knows it ought to be done, but it may be that "Poorest" teachers do not list many items as difficult because they do not know that they are failing in them or because they think someone else should do them.

#### ACTIVITIES AND OPINIONS OF TEACHERS IN RURAL ONE-TEACHER SCHOOLS

Table V gives the replies of 550 teachers in rural one-teacher schools in 24 states to the questions in our check list. Since the check list was devised to find out what teachers of the one-room school must do that is not demanded of grade teachers in the city, no claim is made to having discovered all activities pertaining to the one-teacher school. Although a request for additional activities accompanied the check list, not a single activity that could possibly be unique to the one-teacher school was named by more than one person. We believe, therefore, that we have succeeded in pointing out most, if not all, of the types of activities that are peculiar to the one-teacher rural school.

If we combine Columns 1 and 2 of Table V—"If you do it," and "If you do not, but think you ought to do it"—we have those who accept the responsibility for the activities indicated. If that is done, we find that on only 8 items of the 112 in the list do less than one-fourth of the teachers in the rural one-teacher schools accept the responsibility for the activities indicated. It seems likely that with the possible exception of item 85, having to do with adult education, the 8 items mentioned need not, or ought to, be done by the teacher of the one-room school. As to whether or not

the teacher in the one-room rural school ought to accept responsibility for adult education, there is difference of opinion among experts. The others may well be omitted from consideration in teacher training.

Of the remaining 104 items in our list, we find that 79 are accepted as a part of their job by more than half of the teachers in the one-teacher school. The remaining 25 activities are accepted as a responsibility by more than one-fourth of the rural teachers. There may be a few of the 104 activities, for which a large number of teachers in the one-room school accept responsibility, that are trivial and unimportant, and a few others which the best interests of the school dictate should not be undertaken by the teacher. But we have evidently succeeded in pointing out some 80 or more activities which teachers of the one-teacher school must be prepared to undertake, if they are to succeed.

Column 3 of Table V shows that on only six activities mentioned in the entire list do as many as one-fourth of the teachers say that they think someone else should do it. Two of these are in the list of seven mentioned in a preceding paragraph as being done by less than one-fourth of the entire group. It is evident that on at least 100 of the items in our list there is general agreement among the teachers themselves that the activity belongs to the job of the teacher in the one-room rural school. Current practice and opinion may not be the best criterion of what condition should obtain, but so long as it is current practice it must be considered in training teachers for the job.

Columns 4 and 5 of Table V were not checked at all by more than half of the teachers from the one-room school. Consequently, the opinion of these teachers concerning the importance and difficulty of the activities is somewhat in doubt. Since, however, the individuals who checked these items at all checked through the entire list, it seems probable that the relative importance and difficulty of the items are fairly well expressed, even though their value with reference to the number who accept the responsibility for the activity may be somewhat in doubt.

We find 92 of the 112 activities listed as important by one-fourth or more of those who perform them, 40 by half or more, and 17 by three-fourths or more of those who undertake them. Evidently the activities mentioned in our check list are considered important by those who perform them. This opinion is strengthened

by a number of letters sent by teachers who had filled out the check list, emphasizing the importance of many of the items in our list and calling attention to the fact that they had not been trained to do them.

There is a noticeable negative relation between the number of teachers who consider an item important and the number who perform the activity. Of the 20 per cent of items listed as most important, less than one-third appear in the 50 per cent of items performed by the greatest number of persons. Perhaps a teacher considers important an activity which she thinks she should undertake but which she does not know how to do.

Exactly half of all the activities in the check list are reported difficult by one-fourth or more of those who perform them. Thirty-seven activities are reported difficult by one-third or more of those who do them, and 15 activities by half or more of those who perform them.

The negative correlation observed between the number of teachers who perform an activity and the number who say it is important does not appear to exist in the relation between the number who undertake an activity and those who find it difficult. Of the upper one-fourth of items in order of difficulty we find exactly one-half in the upper half of items in order of the number who perform them. Apparently there is approximately a zero correlation between the number who perform an activity and the number who find it difficult.

There are 61 activities listed as difficult by 10 per cent or more of all returns from the one-teacher schools. Of these, 6 are found in the group of activities, "Often performed by administrators or supervisors." Seventeen, every one in the list, are in the group, "Involved in instruction of classes." Eleven, just half the list, are in the group of activities, "Involved in school activities but not instruction of classes." Of the 17 items listed as "Personal relations," 14 are cited as difficult by 10 per cent or more of those reporting. Ten of the 17 items listed as "Community relations" are marked difficult by a like number. A surprising thing about this column is that of the 17 items, "Concerning buildings and grounds," but 3 are marked difficult by more than 10 per cent of those reporting.

If we examine the table to discover the 10 items most often marked difficult, we find item 23, "Necessity of planning and

executing work with little or no supervision," items 25, 26, and 27, having to do with adapting methods and management to meet the needs of 8 grades in one room, item 28, "Adapting textbooks and printed courses of study," item 39, "Teaching all subjects in 8 grades," and items 63, 64, and 65, having to do with conditions of living. If we examine the data for relation of difficulty to number answering, we find in addition to the items just listed, at the head of the list, items 12 and 13, having to do with law enforcement, item 21, "Plan for educational advancement of the community," item 34, "Teach home economics," item 35, "Socialize children from isolated homes," items 41 and 42, having to do with coaching athletics and the like, item 51, "Preparing and serving hot lunch," item 53, having to do with the conducting of clinics, items 62, 64, and 66, more problems concerning living conditions for the teacher, and items 72, 83, 84, and 85 having to do with social and community leadership.

It seems that the activities involving the greatest difficulties for the one-room teacher have to do with a comparatively small number of kinds of situations. The difficulties can mostly be grouped under the following heads.

1. Problems involved in legal relations.
2. Problems arising from managing all grades together
3. Problems arising from necessity of adjusting teaching methods to fit the rural situation
4. Problems arising from difficult living conditions to which the teacher is not accustomed.
5. Problems arising from the necessity for assuming professional, social, and economic leadership in the community.

#### COMPARISON OF ACTIVITIES OF TEACHERS IN GRADED AND IN ONE-TEACHER SCHOOLS

Table VI is probably the most significant of the entire study in view of the fact that it answers in the affirmative the question as to the existence of significant differences in the two types of teaching positions under consideration.

Only 8 of the 112 items on the list are performed by more than 25 per cent of the grade teachers. Of these 8, item 67 is not significant for teacher training, and each of the others, items 17, 31, 32, 53, 54, 75, and 78, are done so differently in the two types of

situation that it seems doubtful that the same training (unless sufficiently broad to include both) will suffice.

The activities indicated by 64 items of the check list are performed by less than 5 per cent of the teachers in the graded schools, and 82 activities are performed by less than 10 per cent of the grade school teachers. Of the 30 activities on the list that are performed by 10 per cent or more of the grade teachers, two items, 67 and 89, have no significance for teacher training except, possibly, in the establishment of attitudes which will make their performance not too unpleasant.

A comparison of the differences in per cent of the teachers from the one-teacher schools and those from the grade schools who perform the activities indicated by the check list shows that, for *every* item on the list, the per cent of those in the one-teacher schools who do perform the activity is more than three times the standard error of the difference greater than the per cent of those from the grade schools who perform the same activity. Therefore, all the differences in column 1 of Table VI are statistically reliable. That is, so far as the 112 items of our check list are concerned, and which we have attempted to measure, the activities of the teacher in the one-teacher school are different from those of the grade teacher. On every item there is a real difference in the activities of the two types of teaching positions and approximately 80 of those items are considered important by those who do them, and are worthy of consideration in any plan for training teachers to go into the one-teacher schools.

In addition to the facts concerning differences in activities, Table VI presents in Column 3 some interesting evidence on the attitudes of the teachers in the two types of position toward those activities involved in our check list. In answer to the question whether or not the teacher thinks someone else should perform the activity, the table shows that on only 6 of the 112 items does the per cent of the rural teachers exceed that of the grade teachers. On 53 of the 112 items, the per cent of grade teachers who think someone else should perform the activity is at least twice that of the one-teacher school. The grade teachers not only do not perform the activities included in the check list, but they do not think they ought to perform them, and probably they are right; but the teachers in the one-teacher schools must perform these activities, or at least most of them, if they are to succeed.

COMPARISON OF ACTIVITIES OF TEACHERS IN ONE-TEACHER  
SCHOOLS OF VARIOUS STATES

Table VIII shows the per cent of 40 teachers in one-teacher schools in each of 5 states who perform the activities indicated by the items of the check list. We find a surprisingly close agreement between states as to the per cent who perform each activity

If we compare the highest with the lowest state for each item, we find that on 18 of the 112 items the difference equals or exceeds three times the standard error of the difference. But if on each item we compare each state with the one having the per cent nearest it, we find the difference less than three times the standard error of the difference in every case. The difference between the activities of teachers in the one-teacher schools of the various states is less than the differences between "Best" and "Poorest" teachers in the same state and very much less than the differences between teachers in the rural and graded schools of the same state.

There are a few trends, rather than differences, which seem to be distinguishable as between the states. Thus, Arkansas seems low in most of the activities administrative in nature. New York is low on activities involving teaching of special subjects such as music. Wisconsin is low in extra-curricular activities and high in community leadership. Montana has a larger per cent of rural teachers living in unfavorable conditions, and New York a smaller per cent than the other states. In Montana and Oregon the teachers in the one-teacher schools are less engaged in religious activities than in the other states. In New York the teacher of the one-room school has less responsibility for the care of buildings and grounds than in the other states. All of these are merely trends, and in not a single item of the entire list which has significance in teacher training is the variation sufficient to drop the activity from consideration in preparing teachers for the one-teacher schools.

COMPARISON OF ONE HALF OF THE SAMPLING FROM ONE-  
TEACHER SCHOOLS WITH THE OTHER HALF

Table IX is a measure of the reliability of the sampling from the one-teacher schools. On but two items is the difference between halves equal to three times the standard error of the difference. There are less differences between halves of the total sampling than between states or between "Best" and "Poorest" teachers.

There is no discoverable trend that would indicate that additional sampling would change the result appreciably. In fact, if the study had stopped with 292 cases in the list from the one-teacher schools the data would have been almost as reliable as with the 550 cases. It follows that we should not expect any significant change in the returns if the study should be repeated or extended to any number of cases. It seems, too, that the 200 cases from the grade schools are reasonably adequate.

#### CRITICISM OF CHECK LIST

For a considerable number of items in the list, the activity named is so indefinite that there is a lack of certainty as to the intent of the answer. There is need for further study in which many of the items of this list are divided into specific questions, in order that we may determine just what activities should engage our attention in organizing a curriculum for training teachers to go into the one-teacher schools. It is the opinion of the writer that the more specific the activities, the more pronounced will be found the differences pointed out in the data here presented.

This list, involving as it does 550 possible checks, is too long for a single study. The persons answering are less likely to respond to so long a questionnaire, and the first items secure the best attention. The use of the columns other than number 1 is doubtful. They involve matters of opinion, and if they could be answered by a face-to-face interview they would no doubt have greater value than when obtained as in this study. Column 5, involving the question of the difficulty of the various activities, is extremely important, and a means of securing accurate responses should be devised.

#### SUMMARY

At least one-half of the reasons given by county superintendents for superiority and inferiority in the one-teacher schools involve activities that are not commonly performed by or expected of grade teachers in the city.

In the opinion of the county superintendents, the most important factor making for success of a teacher in a one-teacher school is special training for that type of position.

The superior teachers in the one-teacher schools actually perform many more of the activities peculiar to that type of position

than do the inferior teachers. The inferior teachers show much more resemblance to grade teachers in their attitude toward the activities of the check list than do the "Best" teachers. This indicates that training for a grade position might conceivably be a handicap to a teacher going into a one-room school.

About 100 of the items in the check list are actually performed by a sufficiently large number of teachers in one-teacher schools to make it seem probable that the possession of ability and willingness to perform those activities is an important element in success of the teacher in the one-room rural school.

"Best" teachers have markedly different opinions as to the duties of a teacher in the one-room school than do the "poorer" teachers. This difference in attitudes is apparently an important element in success or failure. The desirable attitudes can be secured by proper training.

The difficulties encountered by the teacher of the one-teacher school fall into a few well-defined groups of necessary activities. These particular difficulties should serve to determine the specialized training of those who are to go into the one-teacher schools.

*There is a real and statistically reliable difference between the activities and attitudes of the teacher in the one-teacher school and of the grade teacher in the city.* These differences should form the basis for determining the amount and nature of difference in training teachers for the two types of positions.

There are few significant differences in the activities of the rural teacher in different states. The differences that appear are not important and represent slightly varying local conditions rather than a fundamental difference in the nature of the duties of the teacher. Training for teachers in the one-teacher school should be more uniform in different states than training of grade and rural teachers in the same state.

The differences here presented between the activities of the two types of teaching position are statistically reliable differences and probably represent about all such differences that exist.

## CHAPTER VI

### CONCLUSIONS

The data used in this study were secured in a manner that makes it representative of the conditions in the country as a whole, and the samplings are sufficiently extensive to give the results a high degree of reliability.

The data show that the duties, responsibilities, and activities of the teacher in the one-room school differ with respect to a large number of items that are associated with success from those of the grade teacher in the city.

Teachers in the one-room schools who are rated as "Best" by their superintendents perform many more of those activities which are shown to be peculiar to the one-teacher school than do those teachers rated "Poorest." The inferior teachers do not think they ought to do many of the things demanded of them in the one-teacher school. The superior teachers do all the things demanded of them.

There is little difference in the activities demanded of teachers in the one-room school in various states and sections of the country.

The activities shown to be unique to the one-teacher school have not been made specific enough, in some cases, to form the most reliable bases for setting up a curriculum of special training for those who are to go to the one-teacher schools.

There is need for additional studies in which several of the activities treated in this study are divided into many specifications, and in which the importance and difficulty of the various activities are more definitely determined. The activities of rural teachers in consolidated and village schools should be studied as those in the one-teacher schools have been studied.

On the basis of the data at hand, we propose that in addition to courses in subject matter and theory of education demanded of all prospective teachers, the knowledge and skills involved in the following topics should be included in the training of all who are to go into the one-teacher schools:

1. Laws governing rights and powers of board in one-teacher schools.
2. Laws governing rights and powers of teachers in one-teacher schools.
3. Laws governing compulsory attendance.
4. Laws governing defectives and delinquents
5. Laws governing school bonds and taxation
6. Laws governing school elections.
7. Laws and regulations governing holidays and vacations.
8. Laws and regulations governing sanitary regulations.
9. Parliamentary law.
10. Keeping minutes of a meeting
11. Best practices in janitorial work.
12. Best practices in heating and ventilation.
13. Use of health agencies.
14. Sources, prices, and qualities of school supplies.
15. Playground games and supervision.
16. Coaching and management of teams
17. Practices governing school contests.
18. Best practice in program-making for one-teacher schools.
19. Best practices and various measures for adult education.
20. State and county curriculum regulations.
21. Means of school publicity
22. Methods of individual instruction.
23. Methods of group projection instruction.
24. Use of short recitation periods
25. Teaching several groups at once.
26. Methods in special subjects.
27. Sources of materials of instruction.
28. Best practice in adaptation of materials to rural needs.
29. Use of rural resources in instruction.
30. Educational values in rural environment.
31. Use of standard tests and measures.
32. Evaluation of tests and measures.
33. Educational use of extra-curricular activities.
34. Rural life and customs
35. Considerable knowledge of practical agriculture.
36. Cooperative marketing.
37. Farmers' organization.
38. Rural religious enterprises.

39. Agricultural extension service.
  40. Boys' and girls' clubs.
  41. Health agencies.
  42. Rural recreation.
  43. Weather factors.
  44. Participation in social life of rural community.
  45. Experience in conducting public meetings.
  46. Experience in coaching for and conducting contests.
  47. Practice teaching with a class of beginners.
  48. Practice teaching in a one-teacher school.
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## VITA

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